SEARCHING FOR OTHER PLAYERS: MEANING AND BELONGINGNESS IN VIDEO GAME ADDICTION

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by
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CERTIFICATION OF APPROVAL

I certify that I have read SEARCHING FOR OTHER PLAYERS: MEANING AND BELONGINGNESS IN VIDEO GAME ADDICTION by Michael DeChenne, and that in my opinion this work meets the criteria for approval of a Dissertation submitted in a partial fulfillment of requirements for the degree of Doctor of Psychology at the Wright Institute Graduate School of Psychology.

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In a world where access to video games continues to increase, it is important to determine which factors lead some to play video games to the extent that they neglect major areas of their life. A growing body of evidence suggests that behavioral addictions such as Video Game Addiction share many commonalities with substance addictions. Much of this research focuses on risk factors such as the age or gender of the addict, the underlying neural pathways of reward-reinforcement, or the role of avoidance and affect regulation, where video games serve as a coping strategy to manage difficult emotions. Some authors and clinicians have taken an existential approach, suggesting that beyond merely being a coping strategy, substances can provide meaningful experiences or foster social belonging in the lives of addicts. Utilizing an existential theoretical approach, the present study used semi-structured interviews with addicts to explore what role video games play in their life. Thematic analysis was performed on the interviews to identify common themes. Themes emerged suggesting that video games can appear to satisfy existential needs such as the need for meaningful experiences, achievement, and social connection. However, video games were also found to impair participants' ability to meet existential needs elsewhere in their life by consuming time

and energy that could be spent on other pursuits and by harming their relationships outside of gaming. Video games were also reported to be remarkably stimulating which may make them more tempting than other kinds of activities. The outcomes of this research may be used to guide addiction treatment by justifying a comprehensive approach that supports addicts to find meaningful pursuits and develop social connections.

Dedication

To all addicts, past, present, and future, and the people who love them. And to the children caught in the crossfire.

To my friends at the Hut, to whom I owe my life.

To my wife Jennifer: your patience, care, and humor keep me grounded in a tumultuous world.

To my parents Mike and Mary Beth DeChenne, without whom I would be nothing. I miss you both more deeply than I could ever express.

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Section I: Study Topic and Population

Rationale

Video Game Addiction is a recent phenomenon that is a topic of increasing clinical interest (Griffiths et al., 2012). Video games are a source of entertainment for over 2.7 billion people globally (Lahiguera, n.d.), and allow opportunities such as exploring virtual worlds, embodying one's favorite characters from movies and comic books, and competing against other players from across the globe. For many players, video games are an unproblematic passtime, and can be a source of joy and prosocial behavior. However, some gamers develop unhealthy relationships with the games that they play, to the point that their gaming habits become a source of impairment in other areas of their lives including their relationships, employment, and academic pursuits (Video Game Addiction Symptoms and Treatment, n.d.). One estimate suggests that about 1.96% of adolescents and adults can be considered addicted to video games (Stevens et al., 2021). The addictive nature of video games has led many to draw analogues between problematic gaming and substance use, where a majority of individuals can engage in a behavior without major consequences, while a minority experience a devastating and pervasive impact through most areas of their lives.

The growing concern for problematic gaming is evident in the recent addition of Gaming Disorder to the ICD-11 (see Appendix A), and proposed criteria for Internet Gaming Disorder added to the DSM-5-TR (see Appendix B) conditions for further study (ICD-11 2019; DSM-5-TR 2022). The DSM-5 lists criteria that are analogous to substance use disorders, including agitation when gaming is taken away (withdrawal), the need to spend increasing amounts of time gaming in order to achieve the desired effect (tolerance), unsuccessful attempts to control or reduce gaming, and continued excessive gaming despite knowledge of its negative effects. Internet Gaming Disorder, if added to the DSM, would be only the second non-substance related addictive disorder

following Gambling Disorder. It is therefore important that we continue to investigate problematic gaming, including potential causes, precipitating factors, and treatment options for those afflicted.

Definition of Terms

Video Games

As their name suggests, *video games* are digital games where a player uses some sort of input to interact with the objects on the screen of a video device (New World Encyclopedia, 2023). These games can be played individually, or with others either cooperatively or competitively, and often simulate real life activities such as racing, playing sports, or engaging in combat. Due to the computational requirements needed to run a video game, their widespread adoption has followed consumer adoption of technologies such as personal computers (PCs), the internet, and mobile phones (Yesithsankalpa, 2022).

Historically, the first video games were arcade games, which were dedicated computers that incorporated the screen, control interface, and software into a stand alone cabinet. Fueled by the early success of Pong, developers began to create a variety of games which were available in restaurants, bars, and dedicated arcades through the 1970s and 1980s (Smithsonian Institution, n.d.). As technology continued to improve and arcades began to wane in popularity, they began to be replaced by dedicated consoles made by companies such as Atari, Nintendo and Sega which allowed consumers to play a wide variety of games using their home television sets. This was further compounded by the mainstream adoption of PCs in the 1990s, which allowed people to own a general purpose device that could also play games, rather than spend money on a dedicated console (Kicks, 2023).

In the early to mid 2000s, widespread adoption of internet connections allowed for the rise of online gaming, where people can cooperate with or compete against other

players located across the world (Charity, 2023). As smartphones became nearly universal in the developed world, high quality mobile games became a lucrative way to get people who would not typically spend their money or time on games to become casual players. Currently, technology related to Virtual Reality (VR) and Augmented Reality (AR) represents what many consider to be the next frontier in gaming, where wearable headsets will allow players to become fully immersed in their virtual environments in a way not easily achievable by traditional consoles (Khan, 2023). This creates some context for the fear of Video Game Addiction, as video games have become more immersive and stimulating as they have become more easily accessible.

For the purposes of this dissertation, it is important to define a number of video game related terms that are often referred to in the literature. When considering technology, *consoles* refer to electronic devices primarily dedicated to playing video games (Rouse, 2017). The current most prevalent examples include the Nintendo Switch, the Xbox series, and the Playstation series, produced by Nintendo, Microsoft, and Sony respectively. *PCs* refer to personal laptop or desktop computers that people use for a staggering variety of tasks including work, school, and gaming (Encyclopedia Britannica, 2019). *Mobile games* are analogous to PC games, except they are played from smartphones such as the Apple iPhone (Rouse, 2021).

When considering the type or genre of video game, *single player games* refer to games that are played alone by an individual, and involve only interaction between the player and the game (Cambridge English Dictionary, n.d.). *Multiplayer games* refer to games that multiple people can play with or against one another (Cambridge English Dictionary, n.d.). These include *online games*, which allow players to connect with others outside of their immediate geographic area (Encyclopedia Britannica, 2024). This allows people to meet new people who they might not otherwise meet, or play anonymously

without the typical reputational concerns that come with interacting with people who you already know.

Addiction

In a 2011 public policy statement, the American Society of Addiction Medicine defines addiction as:

> a primary, chronic disease of brain reward, motivation, memory, and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social, and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behavior. (pg. 1)

Broadly speaking, addiction is the compulsive engagement in a dangerous activity, despite knowledge of the negative consequences of this activity. The prototypical example of addiction is substance abuse with alcohol or illicit drugs. The DSM-5-TR specifies 10 separate classes of drugs that produce intoxicating effects and interact with our reward system in a way that incentivizes use on a biological level (DSM-5-TR, 2022). Each class of drug has its own separate disorder that denotes addiction (e.g. Alcohol Use Disorder, Opioid Use Disorder). Though the specific effects of intoxication and withdrawal are distinct to each class of drug, there are 11 criteria that are universal to all specified substance use disorders, suggesting that the pattern of addiction is independent of the substance of choice of the addict. As mentioned previously, examples of these criteria include tolerance, repeated unsuccessful attempts to reduce drug use, drug use interfering with obligations such as school and work, and giving up or reducing important activities to accommodate drug use.

Behavioral Addiction

In addition to psychoactive substances, there are other behaviors that can produce analogous negative effects to drug addiction. Activities such as gambling, sex, shopping, work, internet use, and video games have all been suggested as examples

(Pugle, 2024) of *behavioral addiction* (sometimes called *process addiction*), where it is proposed that the same underlying mechanisms of reward that fuel substance abuse can also fuel behaviors with negative consequences. Currently the only behavioral addiction that the DSM recognizes as a distinct disorder is Gambling Disorder. This is due to evidence that Gambling Disorder has a similar prevalence, development, and progression to drug addiction (DSM-5-TR, 2022, pp.662-666). This includes activation of similar neural pathways in the reward-reinforcement system for both gambling and drug addiction (Potenza, 2008).

Of particular interest with behavioral addiction is the absence of the chemical effects of a substance. For example, stimulants such as cocaine and amphetamines cause the release of neurotransmitters like dopamine, which is integral to our brain's reward system (Yale Medicine, 2022). This can lead to physical chemical dependence, where the brain becomes habituated to the additional dopamine released when the drug is consumed, and produces less dopamine in the absence of the drug. This absence of dopamine leads to the highly unpleasant effects of withdrawal, which can be a strong motivator for drug use despite knowledge of negative consequences. This has led to the concept of “chemical hooks”, where the alteration of neurotransmitters caused by repeated drug use creates a physiological need for the addict to continue to consume their drug of choice. It is understood that though addiction is complicated, this physiological dependence is of great importance to solving the addiction puzzle. Behavioral addiction removes this variable, and requires us to fundamentally reconsider what aspects of experience lead to addiction to certain behaviors.

Person-First vs. Identity First Language. A common debate in disability related communities is about the appropriateness of person-first language, such as “a person experiencing addiction” as compared to identify-first language, such as “an addict” (Wooldridge, 2023). The purpose of person-first language is to elevate the identity of the

individual, rather than define them by a diagnosis that they carry. However, it is important not to apply this heuristic blindly, as different communities and individuals have their own preferences that deserve to be respected. For example, the Deaf and autistic communities have generally stated a preference for identity-first language in an effort to embrace this component of their identity (National Association of the Deaf, 2019; Brown, 2011). There are numerous sources including recovery clinics, nonprofit organizations, and governmental organizations that advocate person-first language in the context of addiction (Jessie, 2021;National Institute on Drug Abuse, 2021; Addiction Language Guide, 2021). However, from my personal experience speaking with addicts in 12-step communities, there appears to be an overwhelming preference for identity-first language. As such, I will choose to use identity-first language to honor this preference.

Video Game Addiction and Related Definitions

There may be some confusion between terms such as Video Game Addiction, Problematic Gaming, Gaming Disorder and Internet Gaming Disorder. This is a remarkably succinct example of the confusion surrounding the phenomenon of Video Game Addiction, as there is no consensus on precisely what is included in this category despite widespread interest. I will attempt to make clear definitions that will be consistent for the purposes of this paper.

It will be simplest to start with the most specific terms, Gaming Disorder and Internet Gaming Disorder. These terms refer to the specific diagnosable conditions as laid out by the diagnostic criteria in the ICD-11 and DSM-5 TR respectively. *Gaming Disorder* (6C51) is specified in the ICD-11 as a disorder due to addictive behaviors including impaired control over gaming, increasing priority given to gaming at the expense of other activities, and continued escalation of gaming despite negative consequences, present for over 12 months (see Appendix A). Gaming Disorder has the

advantage of being the only currently codable disorder that refers to this sort of behavior. Disadvantages include having less diagnostic flexibility than its counterpart in the DSM, and the potential to the name being confused with Gambling Disorder.

Conversely *Internet Gaming Disorder (IGD)* is the proposed disorder met by the suggested criteria in the DSM-5 TR (see Appendix B). Diagnosis consists of meeting at least 5 of 9 listed criteria in the last 12 months, including behaviors like preoccupation with video games, loss of interest in other hobbies, unsuccessful attempts to control behavior, and using games to relieve negative mood. I prefer this definition as it offers more diagnostic flexibility than its ICD counterpart, and the parallels drawn with DSM definitions of Gambling Disorder and specific substance use disorders demonstrate that, in principle, it is an addiction in the same way as other conditions. Drawbacks include that it is not an officially established diagnosis, so the criteria might change if it is eventually added to the DSM. Additionally, the name may be misleading as video games do not necessarily have to be internet based to be addictive.

Video Game Addiction represents one level of abstraction above these two conditions, and refers to the general state of being addicted to video games without necessarily meeting the specific criteria listed above. It describes the dysfunctional relationship that the addict has with video games, where they lack the ability to control their behavior despite knowledge of its negative consequences. It is also important to note that Video Game Addiction will not include games that revolve primarily around gambling, as this would be more appropriately categorized as Gambling Disorder (DSM-5-TR, 2022, p. 914). In order to remain consistent with this definition, the present study will focus on games where gambling is not the core gameplay mechanic. We will be focused on people who play digital games, either on their own or with other players, primarily on personal computers or video game consoles. This will be the main level of analysis to which we will refer throughout this text. This is compared to *Problematic*

Gaming (PG), which is the overall set of video game related behaviors that can be harmful, without necessitating addiction. In the same way that one can occasionally drink alcohol to excess without being an alcoholic, an individual can engage in Problematic Gaming behavior on occasion without necessarily being addicted to video games. Rather, Video Game Addiction is a pattern of repeated Problematic Gaming to the extent that it interferes with major areas of the player's life. Problematic Gaming is a necessary condition for addiction, but it is not sufficient in of itself.

One common limitation in research is the frequent association of Video Game Addiction with the broader category of internet-use disorders. These can include compulsive online shopping, pornography consumption, excessive use of social media or communication applications, and watching online videos or live-streams (Greenfield, 2021; Brand et al., 2016). It is understandable that these forms of consumption are all categorized together as they have arisen out of the same technological advancements, and addicts frequently use one or more of these addictive forms of media. Each of these forms of consumption carry with them their own nuances, and are worthy of research in of themselves. However, one unfortunate consequence of this categorization is that studies frequently measure addiction to one or more kinds of digital consumption, meaning that some studies worthy of consideration do not exclusively measure Video Game Addiction in isolation. *Internet Addiction* will be used to refer to the broad construct of internet-use disorders of which games are a component.

Meaning and Belongingness

The concept of having meaning in one's life is one of substantial clinical and philosophical interest, yet it is also one that is difficult to precisely define or operationalize. In a 2016 paper, Martela and Steger examine the variety of ways that meaning is defined by researchers with the goal of producing a consistent construct for future research (Martela & Steger, 2016). They begin by distinguishing *meaning in life*,

which refers to one's personal sense of meaning, from the idea of the *meaning of life*, which refers to the greater metaphysical questions surrounding why life exists and whether it serves some greater purpose. They argue that the question of the *meaning of life* is outside of the scope of psychology (and possibly the scope of all science), and that psychological research must therefore focus on *meaning in life*, the subjective experience of meaning as felt by humans.

Martela and Steger (2016) observe that while there is no singular definition of meaning in life that is agreed upon by researchers, there are three central components that are frequently identified as intrinsic to personal meaning: *coherence*, *purpose*, and *significance*. They define *coherence* as the cognitive component of meaning, the idea that the world and one's life makes sense and are understandable (Martela & Steger 2016, pp.533-534) . It is related to our desire to detect patterns and make predictions and the comfort that comes from structure rather than chaos. They define *purpose* as the motivational component of meaning, the future-oriented drive that guides our actions (Martela & Steger 2016, p.534). Purpose tends to focus on grander goals than those associated with daily tasks, it is the notion that one's life as a whole has direction and that one is working towards something of value. They note that a person does not need to have a singular purpose, but can have multiple purposes at one time or purposes that change over the course of their life. They define *significance* as the sense that one matters and one's life has been worthwhile (Martela & Steger 2016, pp.535-536). This component can be related to the concept of living well and whether or not one's life has been of value. While this tripartite model by no means marks the end of the conversation around what precisely constitutes meaning, it offers a compelling synthesis of the disparate definitions offered in psychological research.

In order to quantitatively measure meaning in one's life, Steger developed the Meaning in Life Questionnaire (MLQ) (Steger et al., 2006). The MLQ is a brief, 10 item

questionnaire that asks participants to rate items on a seven point Likert scale ranging from “Absolutely Untrue” to “Absolutely True”. Items are evenly divided into two subscales: The Presence of Meaning (PM), and The Search for Meaning (SM). Importantly, while each subscale yields valuable clinical information on its own, the relationship between subscales allows for even more specific interpretation. High scores on The PM subscale are associated with qualities such as high self-esteem, positive affect, optimism, and happiness (Steger & Shin 2010). Conversely, low scores are correlated with depression, anxiety, and negative affect. High scores on The SM subscale are related to low life satisfaction when PM is low, but unrelated or slightly positively associated with life satisfaction when PM is high. In essence, the tone of the search for meaning seems dependent on whether or not meaning is already present. Somebody that has meaning, yet continues to search for it is likely more optimistic than somebody who searches for meaning yet lacks it presently.

In addition to the definition of meaning itself, there is some disagreement as to the role it plays in people’s lives and whether it is necessary. Abraham Maslow famously theorized about a hierarchy of human needs which can be more or less salient depending on current conditions (Maslow, 1943). He identified the five major categories of needs as physiological, safety, love, esteem and self-actualization. These needs are organized in such a way that somebody who is deprived of a basic need will be more motivated to satisfy it than they will be to satisfy needs higher up the hierarchy: “A person who is lacking food, safety, love, and esteem would most probably hunger for food more strongly than for anything else” (Maslow, 1943, p. 373). Broadly speaking, the assumption is that humans who are lacking in one or more of these needs will be motivated to fulfill the most basic need first, and the act of fulfilling this need will decrease its moment to moment salience and allow the higher needs to “emerge”.

If one considers Martela and Steger's tripartite model, the different facets of meaning do not fit neatly into any single level of Maslow's hierarchy. For instance, a sense of coherence could help satisfy the need for safety by instilling the belief that the world is ultimately an orderly and predictable place. Likewise, a personal sense of significance aligns much more closely with the higher need of esteem, which involves desires for prestige, achievement, and appreciation by others. Maslow acknowledges that there are limitations to this hierarchy being applied in a rigid or fixed manner, and it is not a simple manner of completely satisfying one level of need before moving on to the next (Maslow, 1943, pp.386-387).

For instance, somebody who faces intermittent hunger due to food insecurity can still try to secure safety and love even though they have times where their physiological needs for food are unmet. However, the assumption remains that the abstract satisfaction from something like the belief that one's life has significance has a lower survival priority than purely physiological needs. This defines concepts such as a personal sense of meaning as things that are nice to have rather than essentials; in this view abstract concepts are of secondary importance to concrete assets such as food, water, and shelter. In situations where one's basic physiological well being is in jeopardy, Maslow considers meaning and belonging to be "fripperies which are useless since they fail to fill the stomach" (Maslow, 1943, p. 374).

In his seminal work *Man's Search for Meaning* (Frankl, 1962) Frankl posits having meaning in one's life is an essential human need, and that it provides psychological protection against even the most dire of circumstances. Relaying his experience as a captive in Auschwitz, Frankl describes that his desire to publish his manuscript on logotherapy gave him a purpose and a willingness to continue living despite the horrors he witnessed on a daily basis. When faced with constant threats of starvation, disease, and systematic murder, Frankl attests that his personal sense of

purpose was essential to his survival. Additionally, he recounts that time and time again he witnessed fellow prisoners who psychologically gave up their will to live would often die shortly after from seemingly unrelated factors such as typhus (Frankl, 1962, p.37). In his view, having a sense of meaning is one of the most adaptive traits that a person can possess, and a lack of meaning serves as a shortcut to despair, dejection, and in some cases, death. This calls into question the validity of Maslow's hierarchy, and suggests that a sense of meaning might serve a more essential psychological function than initially anticipated.

In alignment with Martela and Steger (2016), Frankl claims there is no one singular meaning that is universal to all humans, and it is up to the individual to discover their own personal meaning. Additionally, Frankl says that this meaning is far from static, and that it can change for each person over the course of their life. Frankl posits that there are three ways that we can discover our own personal meaning: "(1) by creating a work or doing a deed; (2) by experiencing something or encountering someone; and (3) by the attitude we take toward unavoidable suffering" (Frankl, 1962 p. 50). Frankl pays particular attention to his second point, emphasizing that the experience of love for another human being is not merely a consequence of our drive to reproduce, but is a primary goal in of itself. He also says that when this goal is thwarted, people enter a state of *existential frustration*: a state of distress that results from a person's inability to make the life that they have into the life that they want. The absence of meaning creates what Frankl calls the *existential vacuum*, or a state of spiritual malaise that leads to profound suffering. When somebody is unable to fill this vacuum with meaning, they may try to vicariously satisfy their needs through means such as money, sex, and substances. Frankl notes that the existential vacuum gets more prevalent as leisure time increases (Frankl, 1962, p.50), and that it will likely continue to become more relevant as technology improves.

Baumeister's (Baumeister & Leary, 1995) theory of belongingness elaborates on the social component of Frankl's claim, stating that lasting intimate relationships are a primary human need, and that deprivation of these relationships poses significant danger to our psychological health. The belongingness hypothesis claims that humans have a fundamental need for long-term positive relationships, and that these relationships need to involve frequent interaction and mutual concern for one another. Importantly, these relationships are not merely a consequence of satisfying other motives such as sex or casual social interaction. Rather, it is the relationship itself that is essential to the human experience. As evidence for this claim, Baumeister points to the fact that strong social bonds are produced readily even in adverse circumstances, have demonstrable effects on emotion and cognition, lead to negative symptoms in their absence, occur universally in all human cultures, and influence a wide variety of human behavior. Of particular interest to us is the deleterious effects that happen when this motive is *not* satisfied.

Baumeister points out that the detrimental effects of being deprived of belongingness go beyond mere frustrations (Baumeister & Leary, 1995, p.508). He cites the apparent positive impacts of romantic partnership on physical health, where mortality rates are lower for married people when compared to unmarried, divorced or widowed individuals, even when controlling for factors such as income (Baumeister & Leary, 1995, p.508). There is also evidence that this relationship holds true for mental illness, and the ability to tolerate stressful life events (Baumeister & Leary, 1995, pp.509-510). The importance of meaningful social connection is further emphasized by the 2023 US Surgeon General's advisory *Our Epidemic of Loneliness and Isolation*, which identifies loneliness and social isolation as public health concerns of immense importance (Office of the Surgeon General (OSG), 2023). This report ties loneliness to a comparable increase in mortality as factors such as smoking cigarettes, high cholesterol, and obesity

(OSG, 2023, p.24), and linked to mental health issues such as anxiety, depression, and suicidality (OSG, 2023, pp.29-30). This report lends significant evidence towards Baumeister's (1995) claims about the importance of belongingness, and contextualizes it through a modern lens that includes the residual impact of the COVID-19 pandemic (OSG, 2023, p.22). One important lesson from the report that is of particular relevance to the present study is the ambiguous impact of technology on loneliness, which can paradoxically promote both social connection and isolation depending on contextual factors (OSG, 2023, pp.19-21).

Section II: Literature Review

Problematic Gaming

Through this chapter I intend to demonstrate that Video Game Addiction is worthy of research, and that meaning and belongingness present opportunities for interventions in the context of treatment. First, I intend to review what aspects of video games lend themselves to addictive behaviors. Next I will look at what sorts of personal qualities put an individual at risk for developing Video Game Addiction. Next, I will turn to the research around meaning and belongingness in the context of addiction and whether they serve as a protective factor against addiction in general. Finally, I will look at meaning and belongingness in the context of Video Game Addiction specifically, and whether or not playing games can serve to fulfill unmet existential needs in the lives of addicts.

Why is Gaming Addictive?

In 2021, Greenfield wrote a comprehensive article outlining current research on Video Game Addiction, including its biological bases, the characteristics of gaming which make it addictive, and potential treatment options for Video Game Addicts (Greenfield, 2021). This article investigated research surrounding both video game and internet addiction so it refers to a broader phenomenon than simply Video Game Addiction. Greenfield noted that there is some preliminary evidence from fMRI studies suggesting that Video Game Addiction involves the reward-reinforcement pathway, the same neurobiological structures as drug and gambling addictions (Greenfield, 2021, p.100, p103-104.). Additionally, the role that dopamine plays in the reward-reinforcement pathway can cause addicts to become desensitized to activities that are not related to gaming, impairing their ability to work towards long-term goals.

Greenfield also outlined several qualities of modern gaming that contribute to its addictive potential, including ease of access, disinhibition, and boredom intolerance

(Greenfield, 2021, pp.102-103). Video games have become more accessible and reliable than at any point previously. The use of computers, televisions, and smartphones have become so ingrained in our daily lives that one does not need to splurge on expensive equipment beyond what they already have at home. Additionally, the ability to access games at the drop of a hat has contributed to boredom intolerance, which is the inability to "do nothing" for an extended period of time. This boredom intolerance can lead gamers to choose to fill ever-more-brief moments of dullness with rich and captivating virtual experiences. This can be compounded by the related phenomena of disinhibition and anonymity, where one can express dangerous or socially unacceptable behaviors in the absence of real world consequences.

Neuropsychological Shifts in Video Game Addiction

There is a growing body of evidence that there is similar activation of neural pathways and changes in cortical structure in Video Game Addicts to those found in drug addiction. A 2012 literature review examined fMRI and EEG studies on Video Game Addiction and found that during gameplay, gaming addicts showed similar activation of brain regions associated with reward to those found in substance addicts (Kuss & Griffiths, 2012). Moreover, there appeared to be a shift in the activation of mesocorticolimbic pathways over time that was consistent with changes found in the same pathways for drug addicts. These shifts appeared to be more pronounced in male gamers than female gamers, which is consistent with the general observation that gaming addicts tend to be predominantly male (Stevens et al., 2021).

More recently, a 2017 study used fMRI to expand upon the idea Video Game Addiction produced similar shifts in the brain's reward system to those found in substance addictions (Liu et al., 2017). They specifically investigated cue-reactivity, which is how gamers responded to video game related stimuli as compared to "inert" stimuli that was not related to video games. Unsurprisingly, gaming addicts reported

higher levels of craving when exposed to gaming related stimuli as compared to the healthy controls. They also scored significantly higher on the Beck Depression Inventory (mean= 7.49) than the healthy controls (mean=2.91) (Liu et al., 2017, pg.18). Perhaps most importantly, their results suggested that the activation of reward pathways in gaming addicts was consistent with activation in substance addicts as well as gambling addicts.

The development of addiction is often characterized as a shift from voluntary use to compulsive use, and previous research has suggested that there are specific shifts in cortical activation that underlie this behavioral transition in cocaine addiction (Everitt et al., 2008). In this model, drug addiction is viewed as progressive. The initial, voluntary, stage of drug use is viewed through the lens of pavlovian conditioning. Somebody who chooses to experiment with a drug such as cocaine learns to associate the act of taking a drug with its positive subjective effects, which makes them more likely to choose to self-administer the drug in the future. However, as somebody begins to become dependent on the drug, what was initially a voluntary behavior shifts towards a compulsive response, which is accompanied by shifts in activation of neural pathways associated with motivation and reward-seeking (Everitt et. al, 2008, pg. 3126). The findings of Liu's (2017) study suggest that the neurological and behavioral patterns in the process of becoming addicted to video games mirrors the patterns observed in the process of becoming addicted to substances (Everitt et al., 2008).

Preference for Virtual Stimuli

One of the major appeals of video games is the ability to transport oneself to fantastical and foreign worlds. Whether they are fantasy, science fiction, or historically based, video games allow players to interactively engage with captivating environments in a way that is more immersive than traditional forms of media such as films and books. Like other forms of media, video games present a potential way for people to escape

from the reality of day to day life, which raises the question of whether escape is a possible motivation for Video Game Addicts. A 2019 study out of France examined whether or not adult gamers implicitly preferred virtual landscapes from *World of Warcraft* over similar real-life landscapes, and whether the gamers' motivations predicted this preference (Deleuze et al., 2019). Both Video Game Addicts and non addicted gamers showed a preference for the virtual stimuli over the real life equivalent. Additionally, the extent to which they endorsed escapism as a motivation to play games positively predicted this preference for virtual environments. Surprisingly, they did not find that addiction predicted this preference for virtual stimuli, but non problematic engagement did. This suggests that preferring virtual environments over real ones does not, in itself, mean that the player has a problematic relationship with video games.

Affect Regulation, Coping Style, and Video Game Addiction

In contrast to the features of games that can be addictive, in 2016, Brand and colleagues sought to identify which sorts of personal qualities contribute to the development and maintenance of Video Game Addiction through the Interaction of Person-Affect-Cognition-Execution (I-PACE) model (Brand et al., 2016). Similar to Greenfield's article, Brand's model was designed to include the full spectrum of internet related addictions including online shopping and pornography in addition to gaming. In this view, addicts would have a particular activity that is their "first choice use" in the same way that drug addicts may have a drug of choice which they prefer, but they may choose alternate activities depending on the circumstance.

In this model, the Person component refers to the constellation of biopsychosocial factors which may predispose an individual to Video Game Addiction (Brand et al., 2016, pp.254-256). These factors can include genetic predisposition to addictive behaviors, adverse childhood experiences, maladaptive beliefs, and comorbid psychopathology. The Affect-Cognition component refers to how the individual responds

to internal or external stimuli, and can include risky or impulsive coping strategies, how one responds to cravings, attentional and cognitive biases, and how one regulates unpleasant moods (Brand et al., 2016, pp.256-258). The Executive component refers to the individual's executive functioning capabilities, including how one plans for the future, makes decisions, and the degree to which they can inhibit impulses (Brand et al., 2016, pp. 258-259). In particular, the response inhibition component of executive functioning has been demonstrated to be less well developed in Video Game Addicts than in healthy controls (Argyiou et al., 2017). This makes sense, as one of the primary features of goal directed behavior is ignoring and overriding impulses which are counterproductive to achieving one's goals. It seems intuitive that somebody that is impulsive or disinhibited would be vulnerable to playing video games at the direct expense of developing other areas of their life.

In 2019, Brand offered an update to I-PACE which identified risk factors that were specific to each kind of internet-use disorder, elaborated on the interaction of the affect, cognition, and executive functioning in the development of addiction, and identified differences between the early and late stages of addiction (Brand et al., 2019). They propose that in the early stages of Video Game Addiction, behavior is guided primarily by seeking feelings of gratification or relief from uncomfortable affect. As the addict learns that video games consistently provide a means of inducing pleasure or reducing pain this biases them towards choosing video games as a tool to manage emotions in the future. This means that somebody with a decreased capacity for executive functioning will be at greater risk for continuing to choose gaming as a means to cope with a variety of situations. Consistent with the findings from Liu's 2017 study, the addict's decision to play video games becomes more of an automatic reaction to their environment than a deliberate choice.

One study examined the relationship between maladaptive coping styles and the presence of IGD in adolescents (Schneider et al., 2018). They distinguished two major categories of coping styles which characterize how people respond to distressing affect. *Problem-focused* coping involves active attempts to resolve the situation that is causing stress, whereas *emotion-focused* coping seeks to assuage or eliminate the negative emotions themselves. It is typically thought that emotion-focused coping is more likely to be maladaptive, as it includes harmful behaviors such as substance use, withdrawal, and avoidance (Schneider et al., 2018, p.906). Additionally, emotion-focused coping strategies do nothing to materially solve the problem at hand, which can perpetuate the problem and thus increase the negative emotion in the long run. Consistent with their hypothesis, the researchers found that IGD was associated with two emotion-focused coping styles: denial and behavioral disengagement. Due to the cross sectional nature of this study, it is unclear whether teens that gravitate towards avoidance strategies are at higher risk for developing IGD, or that teens with IGD are more likely to develop avoidance as a means to cope.

In a recent literature review, researchers focused on the role that avoidance and escapism play in predicting Internet Gaming Disorder severity (Melodia et al., 2022). Their study was informed by the compensatory internet use model, which asserts people often use digital media to satisfy unmet needs in other areas of their life: somebody who lacks substantial social connection should be more motivated to engage with media that allows them to socialize with others. Each study they reviewed found a significant relationship between escapism or avoidance coping strategies and problem gaming behavior. In particular, they identified three separate clusters of problem gamers, with escapism characterizing two of these clusters. They called the first cluster “unregulated escapers”, which consisted of people who used video games as a maladaptive coping strategy to deal with stressors but had allowed their gaming habit to spiral out of control.

In contrast, the second group of gamers tended to be more achievement oriented, with a more robust sense of self-esteem. In this group skill and esteem in video games seemed to be operating as a surrogate for real-life success. This suggests that gamers who decide to play video games as a means of coping with difficult life circumstances are at a higher risk for developing IGD than gamers who play for other reasons. It additionally provides credence to the idea that video games can act as an imperfect substitute for psychological needs such as social connection or a sense of achievement.

The relationship between gamers' motive and well-being was investigated further in a study documenting the potential positive effects of video games (Halbrook et al., 2019). Looking at Massively Multiplayer Online Role Playing Games (MMORPGs) and violent video games (VVGs), they sought to identify which factors could lead to gaming that actually improves the health of the players overall. They noted that while many online games have an active social component, the manner in which players engage with these games can influence whether it is prosocial behavior. In the case of MMORPGs they found that gamers that played for moderate periods and for primarily social purposes tended to have lower levels of depression and anxiety symptoms than their peers who played excessively or who focused primarily on achievement (Halbrook et al., 2019, p.1098). They also identified that these largely social games can be particularly helpful for people who have difficulty maintaining social connections in person due to factors such as geographic isolation, mental illness, and disability. They also argued that the increase in prosocial behaviors was also present when gamers played VVGs cooperatively or when the game required them to protect another player. VVG players also tended to benefit most when they played in a way that was socially focused rather than achievement focused. This suggests the way in which gamers choose to play has a substantial impact on their relationship with gaming, which has implications for their well being. This also provides clues to not just which elements of

games are attractive, but which ones may have the potential to provide fulfillment to gamers when played in moderation.

Comorbidity with Other Conditions

A 2014 meta analysis investigated which psychiatric conditions had the highest rates of comorbidity with the broader construct of Internet Addiction (IA) (Ho et al., 2014.) The researchers combed databases for cross sectional studies that compared subjects with IA (as defined by Young's Internet Addiction Test) to healthy controls and analyzed psychiatric comorbidity as a main variable or covariate. The final analysis included eight studies with a total of 1641 IA participants and 11210 controls, with studies mostly originating from Taiwan and Korea. Researchers found that the conditions with significantly higher comorbidity than with the normal controls were depression, anxiety, ADHD and alcohol abuse. They found that depression had the highest association, with 26.3% of IA participants having comorbid depression as compared to 11.7% of normal controls. Additionally, they also found significant relationships with IA participants having anxiety (23.3%), ADHD (21.7%) and alcohol abuse (13.3%) when compared to controls (anxiety 10.3%, ADHD 8.9%, alcohol abuse 4.3%.) They also observed that the prevalence of comorbidity varied significantly with the participants' age group, with ADHD having the highest prevalence among 19-39 year olds, depression with 40-76 year olds, and alcohol abuse among 10-18 year olds.

This raises important questions into the etiology of Internet Addiction and Video Game Addiction, such as whether the addiction can be used as a maladaptive means of coping with a preexisting psychiatric condition like ADHD, which manifests at a young enough age that it tends to precede addictive behaviors. It also should make us consider how the stages of life influence comorbid conditions as an adult coping with depression in middle age may look very different from a young adult attempting to manage ADHD or anxiety.

A more recent study focused on the potential comorbidity between Video Game Addiction and autism, and whether or not autistic adults are at greater risk for developing Video Game Addiction than neurotypical peers (Murray et al., 2022). Two common characteristics of autism are restricted or fixed interests and difficulties navigating social situations. The researchers hypothesized that autistic adults might be drawn to play video games because it could serve as one of their interests, and because it could create a place where they can socialize while feeling less social pressure. In particular, they hypothesized that people with gelotophobia (fear of being laughed at) would be at higher risks for Video Game Addiction due to their self-consciousness in face-to-face social interactions. They found that autistic adults were significantly more likely to develop Video Game Addiction than their neurotypical peers, with 9.1% of the ASD group meeting the criteria for Video Game Addiction when compared to 2.9% of controls. They also found that gelotophobia and social alienation also positively predicted Video Game Addiction, while extraversion negatively predicted it. This suggests that somebody who feels like a social outcast may gravitate towards gaming as a safe environment to interact with others, possibly because it helps them manage concerns around being judged by peers.

Impact of Socioeconomic Status and Family Support

One of the largest studies on risk factors for Problematic Gaming sought to investigate the role of Socioeconomic Status (SES) as well as variables such as family support as risk factors for European adolescents (Colasante et al., 2022). Researchers added a questionnaire asking about PG behaviors to the EPSAD, a survey distributed to 90,299 students aged 15-16 across 35 European countries that asks about substance abuse. Like many other studies, the EPSAD found that adolescent males are at a much higher risk for PG than females of the same cohort. Importantly, Colasante found that a warm family environment with active parental support seems to serve as a protective

factor against PG. If adolescents are using video games as a strategy to escape from or cope with stressful emotions, it makes sense that adolescents who receive emotional support from their parents are at a lower risk for PG as compared to their peers. Additionally, they found that countries with higher degrees of economic inequality and lower presence of social programs showed higher rates of PG than their neighbors with less inequality and higher governmental expenditures. One likely explanation is that the stress created by financial worries is emotionally taxing and decreases parents' ability to support their kids emotionally. Additionally, parents in these countries may have less free time to spend with their children due to the need to work and offset the absence of social programs.

Impact of Personality Traits

Granero (Granero et al., 2021) sought to subtype various types of people seeking treatment for Gaming Disorder through a Pathological Gambling Unit at a research hospital in Spain. In addition to assessment for Gaming Disorder, they screened for specific personality traits and symptoms related to other forms of psychopathology. Their analysis identified two separate subtypes of gaming addicts. The first cluster aligned closely with cultural stereotypes around gaming addicts, they were overwhelmingly male (98.6%), with an average age of 21, who were mostly unemployed (86.1%) and unmarried, and they made up 67.3% of the entire sample. Interestingly, the second cluster cut against the grain of these stereotypes, with a much higher proportion of women (22.9%), married individuals (20%), employment (45%) and an average age of 30. Notably, this smaller second cluster reported more severe psychopathology and maladaptive personality traits, constituting an overall worse psychological impact. This suggests that there is more heterogeneity to Video Game Addicts than our societal picture dictates, and that while women may be at a lower risk for Gaming Addiction than men overall, they may be at increased risk for greater severity of addiction.

Another study examined the potential link between stressful life events, neuroticism, and the presence of Internet Gaming Disorder among Chinese adolescents (Li et al., 2022). They were interested in how adolescents respond to stress, whether this response was associated with Video Game Addiction, and whether their level of neuroticism moderated this relationship. Neuroticism is a personality trait related to emotional stability in the face of stress, where more neurotic individuals tend to have stronger emotional reactions than less neurotic individuals. They compared two models, the first being the Diathesis-Stress Model. This model assumes that people with high levels of neuroticism are more vulnerable to high levels of stress than people with low levels of neuroticism, but that there should be no difference at lower levels of stress. This is contrasted with the Differential Susceptibility Model, which suggests that we should recharacterize vulnerability as plasticity. Someone who is vulnerable in a high stress environment might also be more sensitive to a low stress environment, and adapt better than less plastic individuals.

They found that the presence of stressful life events was correlated with IGD, and that neuroticism moderated this relationship (Liu et al., 2022, p.5). Additionally, this relationship was better explained by the Diathesis-Stress Model rather than the Differential Susceptibility Model. What this means is that in lower stress environments, people who score high in neuroticism should have about the same incidence of IGD as people who score low in neuroticism. However, when experiencing greater environmental stress, people with higher neuroticism are more vulnerable to negative emotional states, thus putting them at a higher risk for IGD than their peers. The researchers suggest that in environments where stress is to be expected, such as competitive academic settings, we can expect that some students will have greater vulnerability for IGD, and that taking steps to reduce student stress could also decrease Video Game Addiction (Liu et al., 2022, p.9).

Impact of Maladaptive Schemas

A 2022 study investigated the potential role that Early Maladaptive Schemas (EMSs) might play in the development of Video Game Addiction (Cudo et al., 2022) EMSs are dysfunctional beliefs that one holds about themselves or the world. They arise during childhood from the interaction of the child's temperament with difficult childhood experiences. These beliefs stem from behaviors that may have been adaptive in the context in which they were developed but become maladaptive when they are applied later in life. For example, a child who is raised by overly critical parents may become preoccupied with receiving their approval and develop people-pleasing behaviors. They may continue this pattern as an adult, which may paradoxically lead to less authentic relationships with others.

In the present study, researchers studied the prevalence of EMSs from the Impaired Autonomy and Performance dimension and the Disconnection and Rejection dimension in Video Game Addicts (Cudo et al., 2022.). They also hypothesized that these potential relationships would be mediated by depression and anxiety, and that the relationship would differ between male and female gamers. Participants included 673 Polish gamers between 17-38 years of age who regularly played computer games. Of note, this study was composed primarily of female participants (58.1%) which offers valuable perspective when compared to the male-dominated samples of many studies of Video Game Addiction. Participants were assessed for the presence of Video Game Addiction through the Internet Gaming Disorder Scale-Short-Form (IGDS9-SF), the presence of anxiety and depression measured through the Hospital Anxiety and Depression Scale (HADS) and the presence of EMSs assessed through the Young Schema Questionnaire (YSQ-S3).

The results demonstrated that there was a significant association between EMSs in the Impaired Autonomy and Performance domain and Video Game Addiction (Cudo et

al., 2022., p.14). This points to an upbringing where children are discouraged from making their own decisions, leading to a sense of uncertainty or ineffectiveness. Contrary to their hypotheses, researchers were not able to demonstrate an association between Video Game Addiction and EMSs in the Disconnection and Rejection domain, or in the mediating effects of anxiety or depression. They successfully showed differences in how EMSs present in each gender, with the Practical Incompetence/Dependence schema only associated with addiction in female gamers, and Enmeshment and Vulnerability to Harm/Illness only associated with addiction in male gamers. This suggests that while there is a general pattern of lacking perceived autonomy and the presence of Video Game Addiction, this pattern presents differently in males and females. Male addicts may be more preoccupied by a search for emotional support and by fatalistic attitudes about the world, whereas females may be preoccupied by a sense of inability to handle daily tasks or make good decisions.

Impact of Genre

In addition to the demographics of Video Game Addicts, researchers have also begun to investigate the role that the genre of game plays in the presentation of the addiction. A recent study out of South Korea looked at the gaming habits of students between 4th-8th grade and compared the personality profiles of Video Game Addicts, non-addicted gamers, and non-gamers (Kim et al., 2022). Additionally, researchers asked students about their video game preferences to see if any patterns emerged based on the type of game that participants played. They found that players that preferred First Person Shooter (FPS) and Real Time Strategy (RTS) games showed higher levels of tolerance, withdrawal, and neglect of everyday life than players who preferred other genres. This is not particularly surprising, given that these two genres are known for being fast paced and highly competitive, which might lend itself to addictive behavior. They also found that players who preferred online Role Playing Games (RPG)

had lower empathy scores than non-gamers despite the fact that RPGs require more socialization and cooperation than other genres. It may be that players that have difficulty sustaining relationships in real life are drawn to games with a greater social component in order to meet their social needs. This suggests that we might be in error assuming that there is a monolith of Video Game Addiction, and that different treatment approaches might be necessitated based on the particulars of the player in question.

Concluding Thoughts

It is clear that there are a wide variety of reasons why video games may be addictive. Video games are easier to access than ever before, and playing them activates similar neurological pathways to those found in gambling and substance use (Greenfield, 2021; Stevens et al., 2021). Repeated activation of these pathways leads to cortical shifts over time that change the way that gamers respond to gaming-related stimuli (Liu et al., 2017), and may represent a shift from voluntary to compulsive use (Everitt et al., 2008). Some gamers may even report a preference to video-game related stimuli, even if they are not addicted to video games (Deleuze et al., 2019).

There are additional factors that may put some people at a greater risk for Video Game Addiction than others. People who struggle to cope with negative emotional states may turn to video games as a maladaptive coping strategy (Brand et al., 2016, Brand et al., 2019) and this may be more pronounced in people with less developed executive functioning capacities (Argyiou et al., 2017). Video Game Addiction also has high comorbidity with conditions such as ADHD (Ho et al., 2014.), autism (Murray et al., 2022), and clinical depression (Ho et al., 2014.). The same can also be said for adolescents with lower SES and less familial support (Colasante et al., 2022).

Certain personality traits (Granero et al., 2021; Li et al., 2022) and negative beliefs about the self (Cudo et al., 2022) appear to be additional risk factors for Video Game Addiction. A tendency towards avoidance or escapism as coping strategies is

common in adolescent Video Game Addicts (Schneider et al., 2018). Furthermore, gamers who have unmet needs for achievement (Melodia et al., 2022) and social connection (Halbrook et al., 2019) elsewhere in their lives may use video games as a way to satisfy these needs.

Meaning and Belongingness in the Context of Addiction

Meaning in Life and Substance Use in College Students

A 2020 study attempted to investigate the relationship between meaning in life and substance use in Australian college students (Csabonyi & Phillips, 2020). Their interest came from Frankl's existential vacuum and the idea that people may use substances to cope with a lack of meaning. They investigated the relationship between Presence of Meaning (PM), Search for Meaning (SM) and substance use, as well as whether boredom mediated these relationships. They found that students who reported having meaning were less likely to use substances, and those who reported not having meaning were more likely to use substances. They also found that the students' level of boredom mediated this relationship, which provides credence to Frankl's claim (1962, p.48) that boredom is a common manifestation of the existential vacuum, or a lack of subjective meaning. Interestingly, there was no relationship between SM and substance use, which may support Steger's theory that the search for meaning on its own is not tied to distress, but rather it is searching for meaning when one does not already have meaning that would motivate one to abuse substances.

A recent Turkish study researched the relationship between meaning in life, childhood emotional neglect, and substance misuse among college students (Kurtuluş & Elemo, 2023). Inspired by Frankl's (1962) claims that a lack of meaning leads to an existential vacuum, they wanted to see if Turkish college students who reported a lack of meaning would be more likely to abuse drugs than their peers who reported meaningful lives (Kurtuluş & Elemo, 2023). Congruent with their hypothesis, they found that students

who reported having meaningful lives were less likely to abuse substances, and that students who reported being emotionally neglected as children were more likely to engage in substance misuse. Furthermore, the relationship between emotional neglect and substance use appeared to be mediated by the presence of meaning.

These results suggest that the instability that accompanies emotional neglect may make it more difficult for adults to live in a purposeful way, which puts them at risk for maladaptive coping strategies such as using drugs. They suggest that “providing opportunities in which individuals can experience a sense of meaning may not only reduce the effect of childhood emotional neglect but also helps to reduce risky behaviors such as substance misuse” (Kurtuluş & Elemo, 2023, p. 9).

Meaning in Life and Workaholism

Peplinska (Peplińska et al., 2015) investigated the role that meaning in life and social support play in the presence of workaholism in businesswomen in Poland. Workaholism is characterized by an uncontrollable desire to work and difficulty regulating working habits, in excess of the actual demands placed on the worker by their job. Analogous to PG, workaholism is an example of an activity (work) that draws healthy engagement out of the majority of participants, but has a small minority who engages at the expense of other important areas of their life. Peplinska interviewed 260 female managers and executives and asked them about their work habits, the presence of social support, and their perception of their purpose in life. They found that both social support and purpose in life were positively related to one another, and that they were both inversely related to workaholism. Further analysis showed that purpose in life was a significant mediator between social support and workaholism. This suggests that purpose in life and social support may act as protective factors against workaholism, which may have promising implications for other behavioral addictions.

The Role of Interpersonal Relationships in Addiction and Recovery

Palmer and Daniluk (Palmer & Daniluk, 2007) conducted phenomenological analysis that investigated common themes that either helped or hindered recovery from substance abuse in Canadian addicts. They conducted open-ended interviews with 6 recovering addicts with the goal of understanding the addict's lived experience, with an emphasis on which interpersonal interactions facilitated or impaired the recovery process. Participants noted the centrality of relationships both to maintaining their addiction and to motivating their recovery. They recounted feeling a sense of belongingness with drug dealers and other users as one of their biggest hurdles to getting clean, but at the same time identified that the community they found in programs such as Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) was one of their greatest protective factors.

Additionally, some participants conceptualized their relationship with substances as akin to a social relationship in of itself: "The relationship characteristics attributed by participants to their substance of choice included 'lover,' 'community,' 'understanding,' a 'feeling of belonging,' and 'the one who will always take you back.'"(Palmer & Daniluk, 2007, p. 209). Rather than substances merely being used as a vehicle to facilitate social relationships with other people, the addicts began to conceptualize the substance itself as some sort of social entity. This vivid illustration of the addict's desire for connection clarifies how central a sense of belongingness can be in addiction. It is clear that through the eyes of the addict, the need for belongingness can serve as a motivator both for addictive addiction and for recovery.

This is supported by the findings of Eriksen and Hoeck who spoke with socially excluded alcoholics in Denmark about their narratives surrounding their personal alcohol use (Eriksen & Hoeck, 2022). Participants also identified a conflicted relationship with alcohol where it served as both a source of community and fellowship, as well as

isolation and remorse. In particular, they described joyful times of drinking with friends as one of the main barriers to quitting, worrying that giving up alcohol would also mean giving up opportunities for social connection. This highlights a dual relationship between substance users and their substance of choice that is similar to the one described in Palmer and Daniluk's 2007 study. On one hand, addictive substances satisfy a social role for addicts, and the fear of quitting is exacerbated by a fear of losing the relationships associated with their drug of choice. However, the substance paradoxically also can create a greater sense of isolation from others. This dual relationship suggests that the need to belong is central to the mystery of alcohol addiction, and is possibly an important factor to Video Game Addiction.

This theme also appeared in a study that investigated turning points in addiction, which are specific events in the life of an addict that are catalysts to choosing sobriety (Bellaert et al., 2022). Researchers conducted semi-structured interviews with 30 adult addicts spread across the Netherlands, Belgium, and the UK and asked them about specific life events which played an important role in their desire to change. Participants identified events including becoming a parent, having a specific adverse drug experience (i.e. a "bad trip"), as well as disconnection and isolation from their formal social networks. Participants said that the risk of losing an important social relationship, like a parent or a spouse, was often the motivation that they needed to finally quit their substance of choice. Additionally, they reported that it was necessary to replace the social structures that were once occupied by other active drug users with friends in recovery. The nature of shared experience provided "a sense of hope, connection, and the belief that change is possible" (Bellaert et al., 2022, p. 298), which further illustrates the role that belongingness plays in protecting addicts in the long term.

Spirituality and Recovery

One common trope in AA meetings is that rather than simply being chemical dependence, alcoholics possess a “spiritual malady” that is distinct from alcohol abuse, but that they use alcohol to mask. This, in part, helps to explain the common experience that newly sober individuals often continue to have interpersonal turmoil despite a period of abstinence from drinking. Parsons conducted an ethnographic investigation of Canadian AA members to explore individual interpretations of what constitutes a spiritual malady (Parsons, 2022). Despite its common use in meetings, the concept of spiritual malady is only referenced explicitly once in the *Alcoholics Anonymous* core text and two times in other AA literature, and is never precisely defined. This suggests that rather than being defined in a top-down manner by AA as an organization, the concept was communally developed by AA members in a way that is dynamic and open to individual interpretation.

Parsons (2022) conducted semi-structured interviews with 12 AA members to understand how they conceptualized spiritual malady and the role that this concept played in their recovery. They described it as “an emptiness, a hole in the chest, a void into which alcohol, drugs, sex, money, social status, and so on are poured, providing a temporary sense of wholeness and rightness” (Parsons, 2022, p. 91). Though members acknowledged a biological component to alcoholism, they often pointed to the spiritual malady as predating their alcohol use, such as in a sense of alienation from others beginning in childhood. Alcohol was sought as a temporary relief from this alienation, which highlights the need to build community in addition to merely abstaining from drinking. This locates the themes of isolation and connectedness as central to our cultural understanding of alcoholism.

Rather than simply being an issue of biological chemical dependency, the AA members in Parsons’ (2022) study thought of alcohol as the solution to a preexisting

problem. In particular, enough members related to the idea that their particular spiritual malady was rooted in a sense of interpersonal isolation that it became a common idea despite its relative absence from official AA literature (Parsons, 2022, pp.93,98-99). This has two important implications for the present study. On one hand, it demonstrates that many addicts' concept of their addiction is that of treating an ailment that preceded their substance use. On the other hand, it shows that while the concept of a "spiritual malady" is flexible, many people identify that their specific spiritual malady was related to a lack of belongingness.

In 2009, British researchers investigated the relationship between the spiritual flourishing and quality of life in the long term recovery of alcoholics (Hart & Singh, 2009). Drawing from Frankl's views, the researchers proposed that the presence of meaning and active spiritual involvement in the lives of alcoholics would contribute to their resilience and the quality in many specific areas of their life. They spoke to alcoholics who were approximately two years past spending time in inpatient alcohol rehabilitation and asked them about the presence of meaning in their life, and whether they consider themselves to be spiritual strivers. The presence of meaning was determined by simply asking to what extent participants agreed that their life had meaning and purpose, which gave researchers a spectrum of how much meaning participants reported having access to presently.

Participants were also categorized into "spiritual strivers" or "non-strivers" based on whether they reported seeking "greater conscious contact with the "God" of [their] understanding" (Hart & Singh, 2009, p. 134). It is important to note that the language of this question is taken directly from the 10th step of AA (Alcoholics Anonymous, 2001, p.59), so it is familiar to anyone who is actively involved in a 12-step recovery program. Quality of Life (QoL) was measured by a 26 item survey which consisted of three life domains (Hart & Singh, 2009). Personal functioning included factors such as emotional

management and life satisfaction, interpersonal functioning included the quality of social and familial relationships, and societal functioning included factors such as employment, legal or criminal history, and the extent to which respondents utilized the healthcare system.

Consistent with their hypothesis, the results showed that the amount of meaning that participants reported was positively correlated with their reported QoL in each of the three domains across the overall sample. However, there were minor differences in the association between the presence of meaning and the QoL domains between seekers and non seekers. While spiritual seekers had a positive association between their reported meaning and the QoL in all three domains, non seekers only had the positive association for the personal and interpersonal domains (Hart & Singh, 2009, p.135). That is, for non-strivers the availability of meaning seems unrelated to the extent to which they engage with the justice system, maintain employment, or utilize the healthcare system. Contrary to their hypothesis, spiritual seekers did not have a higher quality of life than non-seekers. This suggests that the presence of meaning can have a positive impact on alcoholics' quality of life regardless of whether or not they consider themselves spiritual seekers.

Does Addiction Provide Meaning and Belonging?

While it is clear that a lack of meaning or belongingness is associated with the presence of addiction, it is important to consider whether addictive behaviors themselves can provide meaning in the lives of addicts. One interesting theory comes from the field of occupational therapy, where Wilcock asserts that humans have an innate need for occupation; that purposeful activity is the central organizing principle of human experience (Wilcock, 1993). She begins from the context of evolutionary biology, where humanity's primary adaptation includes abstract thinking, future planning, problem

solving and curiosity. Humans are intrinsically motivated to engage in activities that will improve their future chances of survival, we are fundamentally driven to *do something*.

While some activities such as hunting, farming, and creating tools have obvious survival value, other activities can have indirect benefits by improving our capacities in general. Wilcock mentions childhood play as an example, where the content of the play may not have immediate survival value, but the social skills developed in the process of play create clear advantages for the individual and the community. From this perspective it becomes clear why emotions like boredom have evolutionary value; time spent not attending to immediate needs is best spent working towards future goals or improving one's capacities. For most of history, our daily occupation was very directly tied to our individual survival. This provided our moment to moment existence a very tangible purpose, subsistence. However, as society has grown more advanced our daily activities have become increasingly divorced from our biological needs, leaving us in an odd predicament. Our primary task has shifted from subsistence to navigating a complicated socio-cultural landscape. This has made our drive for living in a meaningful and purposeful manner more important than it has ever been, and provided greater weight to the ways we choose to occupy our days.

Building on Wilcock's theory, some have posited that part of the reason addiction is so difficult to defeat is that it can serve as a maladaptive occupation. A 2014 study investigated how alcoholics conceptualized their addiction and whether they experienced it as an occupation (Wasmuth et al., 2014). They highlighted the role that occupation plays in providing meaning, routine, structure and a sense of identity. 10 participants from Indiana who identified alcohol as their primary addiction were recruited from AA meetings. 8 of the 10 participants reported having at least one additional addiction including other substances such as methamphetamine and cannabis or behaviors such as sex and eating. Each participant took part in a semi-structured clinical interview where

they were asked to describe things that they found meaningful, what they did during a typical day, and what sorts of things motivated them. The interviews were transcribed and selectively coded using thematic analysis, with the researchers identifying major themes that were present in at least half of the interviews.

Echoing the findings of Palmer and Daniluk (2007) participants described a conflicted relationship between alcohol and a feeling of connectedness (Wasmuth et al., 2014). On one hand, alcohol helped them get over their inhibitions and express themselves to others and access their authentic feelings. On the other hand, participants also frequently endorsed isolating themselves when they drank, and associating sociality with recovery. This suggests that addiction became central to how participants related to themselves and others, and that this relationship applied both during active addiction and recovery.

Another prominent theme that emerged was habituation, where addiction related activities became so ingrained in one's daily routine that it became part of how participants structured their lives (Wasmuth et al., 2014). Participants described engaging in behaviors not to specifically seek pleasure but rather because it was part of their regular routine. Using substances almost became analogous to an activity like brushing one's teeth or driving to work, it was associated with a certain context where it became an effortless extension of the task at hand. Additionally, participants described that addiction provided a means of motivation, even when they were aware that the motivation was maladaptive. They recounted that the desire to continually consume more drugs captivated their attention and that this captivation was desirable in some perverse way.

The extent to which addiction pervades the way addicts structure their lives may give us insight into why relapse is so prevalent despite the negative consequences of addiction. Wasmuth describes abstinence leaving a sudden "occupational deficit" where

addicts do not need to cope merely with the absence of their drug of choice, but the absence of one of the central organizing principles of their life (Wasmuth et al., 2014, p.607). This suggests that while addiction has many obvious dangers it may satisfy an essential human need for purposeful activity. This provides an important clue for the role that video games can play in the life of somebody who struggles to find purpose and meaning elsewhere.

Positive Elements of Addiction

One criticism of research surrounding drug use and addiction is that it tends to focus entirely on the negative externalities that come with it, while ignoring the positive or desirable elements of using drugs (Ivsins & Yake, 2020). A recent study interviewed impoverished drug users out of Ontario in order to fill this gap in the research by allowing marginalized Canadians the chance to voice some of their rationale around consuming substances. They found that while a large proportion of these drug users admitted to the negative impact that drugs had on their lives, there were common themes regarding what drugs provided to them despite these negative effects.

Four major themes emerged from participants' testimonies: managing pain, managing mental health issues, fostering social experiences, and pleasurable physical sensations (Ivsins & Yake, 2020, p.29). Perhaps unsurprisingly, opiate users frequently reported using drugs to manage their chronic pain, often choosing street drugs such as heroin to supplement or replace prescription opiates. They also found that participants often used their drug of choice as a means of coping with mental health issues such as depression, anxiety, and stress. Somewhat surprisingly, participants frequently reported using stimulants such as methamphetamine and crack cocaine to alleviate physical and mental distress, even though these symptoms are typically thought to be more responsive to depressant medications. This suggests that drug users may find pain relief

from substances that are not typically prescribed for pain management, which may speak to the level of psychological relief provided by their drug of choice.

Participants also mentioned that fostering social experiences was one of the primary benefits of their drug use, and that drugs created an opportunity to connect with others in their community (Ivsins & Yake, 2020, p.30). For some, drugs allowed them to overcome self consciousness and social anxiety by reducing social inhibitions. Others reported that using drugs was a social activity in itself, and that using in groups actually served as a way for them to combat isolation. This draws clear parallels with an activity such as video gaming, where people who have difficulty connecting with people in other settings may feel more comfortable meeting and bonding with others over a shared interest. It also highlights that activities such as excessive substance use or gaming, though maladaptive in many respects, also help people meet concrete personal needs. The fact that the costs outweigh the benefits of a behavior does not negate that there are, in fact, benefits.

Video Games as Meaningful or Purposeful Experiences

The phenomenon of purposeful addictive behaviors was investigated in a 2019 study conducted by researchers at the University of Toronto (Shi et al., 2019). Notably, these researchers wanted to create a wholistic picture of the motivations behind problematic gaming that included positive factors that motivated gamers in addition to stereotypically negative factors such as escapism. 16 participants were recruited primarily from Canada and the United States (with 3 participants located outside of North America) who endorsed symptoms of problem gaming and played between 10-62.5 hours of video games weekly with a mean of 30.85 hours.

Participants kept activity logs for one week on an hourly basis followed by one hour semi-structured interviews (Shi et al., 2019). The researchers conducted thematic analysis on the interviews in order to identify common themes. They identified themes

falling into two major categories: gaming as a meaningful and purposeful activity, and push and pull influences on the amount of gaming. Regarding the first theme, participants considered gaming as a part of their life as all of them had grown up playing video games with family and friends. They also considered the gaming community as a subculture that is distinct from and misunderstood by mainstream society. They spoke to the networks of friends that developed around the games that they play, including meeting friends online initially before deciding to meet in person.

Along with these positive experiences, however, participants reported a sense of isolation or alienation from the dominant culture, often feeling judged by non-gamers who considered video games to be childish or a waste of time (Shi et al., 2019, pp.293-294). Being a gamer was, in a sense, being a part of a marginalized group, which led to an additional sense of community amongst other gamers. This again points to gamers having a paradoxical relationship with video games that is akin to what some addicts report with their drug of choice (Eriksen & Hoeck, 2022; Parsons, 2022). That is, video games can serve simultaneously as a source of connection and a source of alienation; somebody that feels separated from mainstream culture may be drawn to video games as a means to connect with similar people.

Participants also identified gaming as a purposeful activity as distinct from other forms of media (Shi et al., 2019). They noted that games allowed them to make decisions that matter, that they can interact with stories with more impact than in passive activities such as reading or watching movies. They also identified the role that challenge and mastery play in video games, that each game is a skill that one can improve with practice. This was particularly salient in competitive online games, where improving one's rank represented measurable progress when compared to their peers.

The other major theme that researchers investigated was the push and pull influences that impacted the participants' amount of gaming. They stated that a

substantial factor influencing playtime was how easily one could turn on a game and fit it into their unstructured time. Participants frequently reported that they were able to abstain from gaming when they engaged in other meaningful activities, and some even took up activities such as volunteering specifically to reduce their playtime. However, some also admitted that this was not a perfect strategy, and that they would sometimes find themselves neglecting other obligations like work and school in order to play. Some also identified environmental influences like conflict in the home or violence in the community that made it adaptive to isolate oneself from the outside world. Some also identified the conflicted role that gaming played in their social life, simultaneously allowing them to stay connected with friends or meet new ones, as well as drawing them to isolate or decline plans with others.

A 2017 study sought to elaborate on how gamers can think of video games as either *fun* or *meaningful* experiences (Rogers et al., 2017). They drew from theories describing other forms of media such as movies that *fun* and *meaning* are distinct dimensions of media consumption that relate to different kinds of experiences. *Fun* experiences are associated with more hedonic pleasure and are primarily concerned with creating positive affect, whereas *meaningful* experiences are associated with poignancy, contemplation, and insight to the human condition. They noted that while media such as movies or TV shows are widely acknowledged to provide both fun and meaningful experiences, video games are often associated solely with fun due to cultural connotations around the concept of play. They argue, however, that the interactive nature of video games requires the consumer to actively engage with them in a way that creates the potential for meaningful experiences centered around player agency and choice.

The 485 participants were gathered through online forums and social media and asked to describe either their “most fun” or “most meaningful” video game experience,

and to recall the premise of the game, how the game made them feel, and to write a review that justified why they found that particular game to be fun or meaningful. They found that descriptions of fun game experiences tended to focus on the way in which the player interacts with the game, and involved “feelings of flow, challenge, and detailed design” (Rogers et al., 2017, p. 69). This is contrasted with meaningful experiences, which were more focused on interesting narratives, feeling connected with characters or other players, and compelling moral choices.

In some ways, this notion of meaningful gaming experiences is similar to meaningful movie experiences; people can relate to characters and be inspired by gripping stories. However, video games offer an additional dimension for meaningful engagement by allowing gamers to be active participants in how the story unfolds. Players recounted being faced with moral dilemmas in which their choices had consequences within the context of the game’s narrative. This level of involvement provided some players with a sense of accomplishment that is typically absent when consuming other forms of media. They also noted that some games allowed them to create their own characters, which creates an additional level of immersion beyond playing out the story of a character provided to them.

Importantly, participants noted that fun and meaningful experiences are not mutually exclusive. Games that allowed players to socially engage with others were often cited as falling into both categories, as they allowed people to build and sustain existing relationships, or create new ones (Rogers et al., 2017, p. 72). This multiplayer engagement also often involved overcoming challenges, with one participant recalling “It’s very rewarding to accomplish something you have invested time in with people you enjoy associating with” (Rogers et al., 2017, p. 73). This suggests that online gaming can serve as fertile ground for experiences of both meaning and belongingness, which adds important context to how such experiences can be so captivating.

Identification with Digital Avatars

In a 2023 study, researchers hypothesized that gamers may seek to find meaning through video games by identifying with their digital avatars as a means to escape reality (Fraser et al., 2023). This study conceptualized meaning as related to the ability to competently interact with one's environment, and suggested that people who lack meaning in their lives might be more inclined to use their avatars as digital surrogates of themselves. Moreover, they broke the construct of meaning into two components indicating the Presence of Meaning (PM) and Search for Meaning (SM). Drawing from previous research, they hypothesized that having meaning in one's life (PM) would serve as a protective factor against addiction, but actively searching for meaning (SM) could serve as a risk factor if people use video games as a means to find meaning that they lack in other areas of their life.

The researchers recruited 492 Canadian adults with an approximately even gender split (53% female, 44% male). Video Game Addiction was measured through the IGDS-SF, the presence of and search for meaning was assessed through the Meaning in Life Questionnaire (MLQ), escapism was measured through the Trojan Player Typology Scale (TPT) and level of identification with their avatar through the Player Identification Scale (PIS). Researchers found that PM was negatively associated with IGD risk, that participants who reported higher presence of meaning were at lower risk for Video Game Addiction. They also found that SM was positively associated with IGD risk, that participants who actively were searching for meaning were at higher risk for Video Game Addiction. They also found that higher rates of escapism and avatar identification both predicted increased IGD risk.

These findings lend credence to the idea that somebody who is struggling to find meaning in their life may retreat to video games as a means of escape. Video games give players a capacity for meaningful action in a way that other forms of media do not,

which may make them particularly attractive for somebody who is trying to live their life in the way that they would like. This may be made even more potent by the ability for players to make avatars that could serve as digital idealized versions of themselves. This suggests that video games may be able to satisfy an existential human need, that our drive to influence the world around us is so important that we will attempt to satisfy it in imperfect yet compelling virtual ways.

Meaning and Belongingness in Treatment of Video Game Addiction

Some researchers have turned their attention to the potential value that meaning and belongingness can play in treatment for Video Game Addiction. A recent study out of Germany focused on the impact of life satisfaction on treatment outcomes of adults receiving treatment for gaming and internet use disorder (IUD) (Müller et al., 2023). Participants took part in a randomized controlled trial where the intervention group was immediately administered a manualized treatment protocol consisting of 15 skills-based group sessions and 8 individual therapy sessions, and the waitlist control group received the same treatment after a 15 week waiting period. Participants responded to surveys reporting their life satisfaction at the beginning of treatment (t0), mid treatment (t1), post treatment (t2) and 6 months post treatment (t3). Consistent with their expectations, researchers found that higher life satisfaction immediately post treatment predicted fewer symptoms of gaming and internet use disorders six months post treatment.

The data suggests that a sense of life satisfaction may be a protective factor against stress and other vulnerability mechanisms that might influence relapse. They also found that this positive effect was moderated by the personality traits of extraversion and openness; higher levels of extraversion and openness increased the impact of life satisfaction on IUD (Müller et al., 2023, pp.162-163). The researchers hypothesized that extraverts would be more likely to seek social support, which could in turn improve their life satisfaction and guard against relapse. Likewise, an attitude of openness might lead

people to actively engage with new experiences which would buffer life satisfaction in a similar way. These results show that there is promise in incorporating interventions that support general life satisfaction into treatment plans for gaming addicts. However, it is important to remember that this study focused on the construct of life satisfaction rather than meaning or belongingness directly.

The relationship between meaning, social support, and IGD was more directly measured through a 2019 longitudinal study involving university students in China (Zhang et al., 2019). 469 students answered a survey which measured the presence of IGD symptoms, their reported sense of purpose in life (PIL) and their extent of current social support (W1). 283 of these students followed up by answering the same survey 1 year later (W2), which allowed researchers to examine the predictive potential of PIL and social support in the presence of IGD symptoms. The researchers found that higher PIL and social support at W1 were both correlated with lower IGD symptoms at W2, but only PIL significantly predicted lower symptoms. They considered the context of a university setting, noting that there was a substantially higher proportion of students meeting the criteria for IGD than would be found in the general adult population of China.

The researchers suggest that there may be particular developmental challenges for university students, such as managing identity development and increased autonomy, that may put them at higher risk for the problematic behaviors associated with IGD (Zhang et al., 2019, p.4). This demonstrates that PIL could potentially be a protective factor against developing IGD symptoms, lending further credence to the idea that increasing PIL could be an important element of IGD treatment. They also found a bidirectional relationship between PIL and social support, where higher PIL at W1 predicted higher social support at W2, and vice versa. This could mean that having social connections helps to create a sense of personal purpose, and that having a sense of purpose can help one forge new relationships. A potential negative consequence of

this relationship is that lacking somebody who lacks purpose may find themselves socially isolated, and somebody who is socially isolated may struggle to find purpose.

Concluding Thoughts

Frankl (1962) hypothesized that a lack of meaning could lead to the existential vacuum, and that people may use substances to cope with their despair. Multiple studies (Csabonyi & Phillips, 2020; Kurtuluş & Elemo, 2023) suggest that college students who lack meaning are at additional risk for substance abuse than their peers who report having meaning. There is additional evidence that Polish businesswomen who have a sense of purpose are at lesser risk for workaholism than their peers without purpose (Peplińska et al., 2015). While these studies may not be enough to establish causation on their own, they do suggest that meaning may be inversely related with addiction.

Studies about recovery communities show that addicts frequently report a sense of loneliness or alienation as perpetuating their addiction (Eriksen & Hoeck, 2022; Palmer & Daniluk, 2007). Substances became a vehicle to make new social connections, to the point that addicts developed “relationships” with the substance itself (Palmer & Daniluk, 2007). Addicts who reflect on their decision to pursue sobriety often report fractured relationships as important motivators to change (Bellaert et al., 2022). This motivation for connection also became a protective factor in recovery, where developing relationships with other addicts helped people feel less isolated (Bellaert et al., 2022; Palmer & Daniluk, 2007, p. 209). Addicts who actively strove for a greater sense of meaning disclosed higher quality of life than those who did not actively strive to do so (Hart & Singh, 2009).

Wasmuth (2014) suggested that addiction itself could be considered a purposeful activity that satisfies an intrinsic human need to occupy ourselves (Wasmuth, 2014; (Wilcock, 1993). Others (Ivsins & Yake, 2020) found that in addition to the negative elements of drug addiction, addicts also identify positive aspects such as pain

management, mood management, and social connection as factors in perpetuating continued use. This is mirrored in Video Game Addiction, where addicts identify achievement, social connection, and purposeful choice as important motivators to play by allowing gamers to fulfill needs that are unfulfilled elsewhere in their lives (Rogers et al., 2017; Shi et al., 2019). This potentially has positive implications for treatment, as Video Game Addicts with social support and a sense of purpose may have better outcomes than their peers (Müller et al., 2023), and that purpose and social support may mutually enhance one another (Zhang et al., 2019).

Section III: Methods and Measures

Overview and Context

The proposed study seeks to explore the relationship between meaning and belongingness in the experiences of Video Game Addicts. It is operating from the context of the claims that Frankl made about meaning, and that Baumeister made about belongingness (Baumeister & Leary, 1995; Frankl 1962). Namely: both meaning and belongingness represent essential human needs, and humans are driven to fulfill both of them directly. Meaning and belongingness are existential needs, and are often framed as less essential than physiological needs, leading many to think of them as luxuries rather than truly innate drives. There is one sense in which this is true, people can only survive for short periods of days or weeks when deprived of something like food, but can live for years or decades without a sense of purpose.

Lacking either meaning or belongingness leads to profound existential and psychological suffering, and having a sense of meaning can serve as a motivator during periods where physiological needs go unmet. While our present society has made great progress in being able to provide for physiological needs such as food, water, and shelter, it is comparatively deficient in providing purpose or community. As such, many members of developed societies are at greater risk of being deprived of their existential needs than they are of their physiological needs. This means that the deleterious effects that come with a lack of meaning or belongingness represent an exceptionally modern psychic disease, and that people will go to great lengths to remedy the symptoms of this disease.

Video games present a uniquely interesting response to this predicament. On one level, video games can be viewed from the perspective of one of many forms of entertainment. People can choose to play video games to avoid negative emotional states in the same way that they can choose to watch a movie, read a book, drink a

beer, or smoke cannabis. In this sense they are just activities, each kind with its own set of benefits and drawbacks. On a different level, the interactive nature of video games means that they can present experiences that are engaging in a fundamentally different way than more passive or “one-way” forms of media like books and movies. Video games invite players to influence their experience directly, and can facilitate cooperative or competitive experiences with other people. That is, video games can be meaningful experiences in of themselves, and they can potentially act as a proxy for real world experiences. This means that rather than merely being a way to fill time or avoid negative feelings, video games have the potential to provide the meaning and belongingness that is absent in other areas of addicts’ lives that is distinct from more traditional forms of entertainment.

Exploratory Questions

The goal of the proposed study is to answer the questions “What role do meaning/belongingness play in the lives of Video Game Addicts?”, and more specifically “Do video games provide a sense of meaning/belongingness to people who might lack it otherwise?” These questions will be explored via semi-structured interviews with Video Game Addicts.

Thematic Analysis

As outlined by Braun and Clarke, Thematic Analysis is a means of identifying and examining themes in a dataset, and is particularly desirable due to its flexibility in how it can be implemented (Braun & Clarke, 2006). It provides the researcher freedom into how they choose to organize and code their data, and the extent to which it is tied to a particular theoretical approach. It works well with smaller but more detailed samples such as interviews, making Thematic Analysis an ideal methodology for the present study.

Theoretical Thematic Analysis is done from the context of the researcher's specific theoretical interest, which will allow me to hone in on the particular details related to meaning and belongingness as it appears in participants' testimonies without needing to exhaustively address all the themes throughout the data. This means that this study's analysis will be focused on depth rather than breadth, and will allow me to explore my specific questions in a thorough and nuanced way. It will also allow me to remain open to relevant themes that emerge from interviews that I do not anticipate beforehand. In the context of the greater corpus of literature on Video Game Addiction, studies often focus on factors such as comorbid psychopathology or personality characteristics, with a comparative lack of depth analysis of elements of addicts' experiences. This also highlights the potential impacts of the proposed study from a social justice perspective, giving voice to a marginalized community that has only recently garnered substantial clinical attention.

Thematic Analysis Procedure

Braun and Clarke lay out a six phase "recipe" to conduct thematic analysis (Braun & Clarke, 2006). They emphasize that these steps are not rules to be applied rigidly, but rather flexible guideposts to direct the analysis. Rather than being applied linearly, these steps represent a recursive process by which the researcher moves back and forth between the phases as their analysis develops. The six phases are as follows.

Phase 1: Familiarizing Yourself With Your Data

The initial step of transcribing and immersing oneself in the data. Here, the researcher takes time to transcribe the data and verify that the transcriptions are accurate. This first pass allows the researcher to become familiar with the data in detail, and allows them to take notes and mark ideas for potential coding.

Phase 2: Generating Initial Codes

Here, the researcher develops the initial set of codes that will serve as the most basic unit of data for analysis. This involves reading the transcripts and identifying potential patterns in the data. The researcher should pay attention to coding all data equally, without being preoccupied by organizing the data. It is possible for unexpected patterns to emerge, and coding all data equally may allow the researcher to formulate themes that were not obvious at the outset of the study.

Phase 3: Searching for Themes

The researcher begins to take the initial codes from Phase 2 and organize them into overarching themes. This allows the researcher to begin to organize the data at different levels of abstraction. Themes can be arranged hierarchically, with overarching themes or sub-themes providing additional tools for organizing the data. Recursion is an important element of this step, as the researcher can add, combine, and revise themes as necessary.

Phase 4: Reviewing Themes

Examine and revise the themes from Phase 3, and ensure that they organize the data coherently. This includes reviewing all of the codes within each theme to verify that they form a coherent idea, or whether they need further refinement. This is followed by reviewing all of the themes in the context of the entire data set with the goal of describing as much of the data as possible in a satisfactory manner. Braun and Clarke highlight that this step could potentially be repeated forever, and that it is up to the researcher's judgment to determine when no additional value is added by additional refinements (Braun & Clarke, 2006, p. 92).

Phase 5: Defining and Naming Themes

Here, the researcher seeks to capture the essence of what each theme conveys. This includes telling the in-depth "story" of each theme, describing what each theme

attempts to capture and why it is important to the dataset. This includes describing the significance of the themes with respect to each other. Braun and Clarke caution against making a single theme too complex, and that this could indicate when it is necessary to divide themes into sub-themes that define individual conceptual components (Braun & Clarke, 2006, p. 92). This phase also includes naming the themes, with the goal of succinctly illustrating each theme in a way that captures the reader's attention.

Phase 6: Producing the Report

The final phase consists of distilling all of the information generated from previous steps into a clear and compelling analysis. Here, the researcher must accomplish two primary tasks. First, they must justify their reasoning and demonstrate that their proposed themes follow coherently from the data they gathered. Secondly, they must present a vivid and compelling picture that convinces the reader that their analysis has merit.

Participants and Recruitment Methods

Determining Sample Size

The sample consisted of eleven adults who live within the United States who identify as Video Game Addicts. Determining an appropriate sample size for a qualitative study is more controversial than in a quantitative study, where tools like Power Analysis allow quantitative researchers to determine a minimum number of participants before collecting data (Sim et al., 2018). In determining sample size, qualitative methods such as Thematic Analysis rely on the concept of *saturation*, which is the point at which analyzing more data ceases to generate new insights (Hennink & Kaiser, 2022). Essentially, the idea is that researchers must strike a balance between conducting enough interviews that they identify the major themes, while not conducting so many interviews that it impairs their ability to explore the data in depth.

While some researchers have proposed statistical methods of determining the size of the sample needed for saturation a priori (Fugard & Potts, 2015), this has generated significant backlash from foundational Thematic Analysis researchers (Braun & Clarke, 2016), who claim that this would require researchers to make assumptions that contradict foundational elements of Thematic Analysis. Namely, Braun and Clarke emphasize that themes are not distinct objects that are in the data waiting to be discovered (Braun & Clarke, 2016, pp.3-4). Rather, themes are generated by the researcher repeatedly interpreting and reinterpreting the data, and crafting a theory that explains the data with depth and nuance.

This implies that in Thematic Analysis, saturation is not something that can be calculated before data collection (Sim et al., 2018). However, there are methods that researchers can apply after data collection to determine at which point saturation was reached (Hennik & Kaiser, 2022). Hennik and Kaiser conducted a meta analysis that compared qualitative studies that identified how many interviews or focus groups it took to reach saturation. They found that of the 16 studies that used interviews, saturation occurred between 5-24 interviews, with the majority of studies reaching saturation between 9-17 interviews, with a mean of 12. This range included multiple methods of assessing saturation, each of which was based on a method called Code Frequency Counting. In Code Frequency Counting, researchers count the number of new codes in each successive transcript, and define saturation as the point at which no or few additional codes are identified. Researchers employed multiple variations of this method, some adding additional stopping criteria such as saturation being confirmed after 2 or 3 consecutive interviews with no additional codes.

Drawing on the findings of Hennik and Kaiser and in accordance with Wright Institute policy on sample size for qualitative studies, the initial aim was to find a minimum of 10 individuals (ideally 12-16) who are willing to participate in a

semi-structured interview about their experience with Video Game Addiction. Due to differences in the way that participants choose to define addiction, this could have included addicts in the active stage of addiction, or recovering addicts who still identify as addicts, even if they are not currently playing video games addictively. The initial sample as intended to consist largely of active addicts, allowing me to gain insight into addicts' experience of addiction *as it feels in the present*. However, based on responses to the initial survey the sample was expanded to include self-identified addicts who are either in remission or recovery. This provided additional insight into what factors or interventions helped them overcome their addiction, and whether activities that contribute to a sense of meaning or belongingness played a part in their recovery.

Participants initially completed a brief survey through Qualtrics to gather demographic information and contact information including an email address and phone number. In the interests of participant privacy, minimal demographic information was gathered. I asked the participant's age, as well as their assigned gender and gender identity. Due to the general tendency for samples of Video Game Addicts to skew male, it seems like gender is a particularly salient demographic variable. Demographic information and whether the participant meets the inclusion and exclusion criteria was verified in a short phone call after they completeed the initial survey, along with reviewing informed consent.

Inclusion and Exclusion Criteria

The inclusion criteria were adults located in the United States who identify as Video Game Addicts based on self-report. Participants needed to be able to participate in a 60-90 minute interview in spoken English, over HIPPA compliant Google Meet. The exclusion criteria were people 17 years old or younger, people located outside of the United States, people unable to complete a 60-90 minute interview in spoken English, and people who do not self-identify as Video Game Addicts. While I did not be use the

DSM-5-TR proposed criteria (Appendix B) for Internet Gaming Disorder, I believe there is legitimacy to the assertion that the construct of Video Game Addiction should not include games that revolve *primarily* around gambling mechanics, such as online poker, as this would be better classified as Gambling Disorder. As such, people who are addicted to games such as online poker were excluded from the study. Additionally, people who are currently in inpatient settings were excluded so as not to run the risk of exploiting somebody at a vulnerable time. Finally, since there has been demonstrated comorbidity between Video Game Addiction and substance use (Ho et al., 2014.), participants needed to be sober during the interview, so people under the influence of drugs or alcohol at the time of the interview will be excluded.

Recruitment of Participants

Recruitment of individuals was conducted through outreach to online communities for self-identified Video Game Addicts, word-of-mouth contact through the researcher's professional and personal networks, and posting of flyers locally to the area around The Wright Institute, particularly the adjacent UC Berkeley Campus. Online recruitment happened primarily through r/stopgaming, an internet forum which is centered around users who consider themselves addicted to video games and would like to stop (r/StopGaming, 2019). This subreddit has been used to recruit research participants in the past (Bulatova, 2024, Morrell 2020). Recruitment through professional networks was through the Wright Institute email list. Flyers were placed around Berkeley due to its proximity to the Wright Institute and the large number of students at UC Berkeley. Young adult males appear to be at high risk for Video Game Addiction, so reaching a large student population will potentially be valuable. The posting of flyers around UC Berkeley presents an obvious sampling bias towards recruiting local college students, which will likely have implications for demographics of participants in terms of age, race, and socioeconomic status. I took care to select as diverse and representative

of a sample as possible from respondents, but this was ultimately limited by the diversity of people who chose to respond in the first place. Saturation was assessed after the fact by counting the number of new codes in each interview, and identifying the point at which no new codes are identified. Participants received a $25 Amazon gift card as compensation for their participation in the interview.

Data Collection and Storage

The interview was done through the HIPAA-certified Google Meet platform. The interview was recorded through Google Meet's integrated recording feature and stored locally on an encrypted USB drive. The video portion of the recording was deleted immediately, and the audio recordings were transcribed through a HIPAA compliant transcription service. The audio recording of the interviews was deleted once the transcriptions were verified for accuracy. Any identifying information that comes out during the interview was taken out of the transcript.

Sample Interview Questions

Interviews were conducted in a semi-structured format, so the following list of questions represented the kinds of questions that were asked and the topics that were explored, rather than a verbatim list that will be asked in every interview.

Questions related to the participant's relationship with video games:

1. What would you say that video gaming provides to you?
2. How would you describe your relationship with video games?
    a. When did you begin playing? What sort of games do you play?
    b. What has been the trajectory of your relationship with gaming?
    c. What feels good about gaming?
3. Why do you consider yourself addicted to video games?
4. Has anyone ever given you feedback about your video game use?
5. What sort of positive experiences are related to your gaming?

Questions related to meaning:

1. How would you describe a typical day in your life?
    a. Are you engaged in school/work/volunteering?
2. What sorts of activities do you find fulfilling or meaningful?
3. Has your relationship to video games impaired your ability to engage in these activities?
4. Do video games provide a sense of meaning or personal fulfillment?
    a. What do you find meaningful about gaming?

Questions related to belongingness:

1. How would you describe your social relationships?
    a. How many close friends do you have?
    b. How often do you spend time with/speak with them?
        i. What medium do you use to communicate with them?
        ii. Do you participate in shared activities?
    c. Do you consider these relationships to be reciprocal? (i.e. do you find your relationships to be fair or balanced? Do both parties participate equally?)
    d. What were your relationships like in your upbringing?
    e. What has your experience been with romantic relationships?
2. How would you describe your familial relationships?
    a. How are they currently as compared to in the past?
    b. Do you consider these relationships to be reciprocal? (i.e. do you find your relationships to be fair or balanced? Do both parties participate equally?)
3. How has your gaming impacted your relationships?

a. Has your gaming made it *more difficult* to form or maintain some relationships?
b. Has your gaming made it *easier* to form or maintain some relationships?

Ethical Considerations

As is the case with substance addictions, Video Game Addiction typically comes with debilitating psychological effects. Video Game Addicts are at greater risk for comorbid mental health conditions such as anxiety and depression (Burkauskas et al., 2022) than the general population, which may make them more susceptible to negative affect when sharing the details of their experiences. Participants were not expected to experience harm by volunteering for this study. Instead, they might have felt more connection and a sense of meaning. In the event that anyone experienced distress after the interview, participants were provided with a support group referral list for online and local support. Participation was completely voluntary, and participants could choose to end their participation at any time, no questions asked.

This study followed all guidelines as dictated by the Wright Institute Human Subjects protocol, including stipulations around storing transcripts of interviews and removing identifying information such as subjects' names from the final report. I took care to provide an ethical, warm and clinically affirming interview environment. Thankfully, playing video games does not carry the same legal consequences as consuming illicit drugs, so participants face less legal risk in being open about their addiction than they would if they used illegal substances. However, Video Game Addiction still carries social stigma, and the utmost care was taken to ensure participant confidentiality, respect and dignity.

Bracketing of Bias

I have played video games for essentially my entire life, and they remain one of my favorite pastimes as an adult. Though I do not hold being a gamer as close to my

identity, it is something I would have identified more with as an adolescent, and my relationship with games has waxed and waned over the years. It is possible that my personal attitudes towards gaming may bias my perceptions of the subject.

A large portion of my interest in this topic comes from my clinical work with two particular individuals who identify as gaming addicts. Though I did not go through the criteria explicitly with either of these individuals, it appears that both of them were severely impaired from living the sort of life that they would like as a direct result of their gaming behavior. I enjoyed working with both of these individuals, I felt highly connected in both instances and I still hold fondness for both of them. However, I know this is a small sample, and that I might have been tempted to apply qualities I have seen in these two individuals to the population of gaming addicts as a whole. I was vigilant to attend to what I found in the data as opposed to the particularities of my relationships with these two people.

The final bias I must account for is my relationship with addiction. I have personal experience related to addiction and recovery through the impact it has had on friends and loved ones. Overall, I believe this experience is an asset to me studying Video Game Addiction, but I agree that it may bias my approach. From what I have witnessed, 12-step recovery programs such as AA and NA tend to have the most durable positive impact. I also know that there is no universal cure for addictive behavior, and that each person's journey looks different. Though I believe in harm reduction, I have seen the most prosperity come from complete abstinence. I also must acknowledge that while abstinence from gaming may be practical, abstinence from all electronic devices is not realistic in this current age. I believe this lends credence to the notion that while one may be able to be gaming abstinent, this may be a part of a greater program of harm reduction when it comes to technology use in general.

Section IV: Results

Eleven self-identified Video Game Addicts completed interviews for this study. Interviews were conducted remotely through Google Meet during May and June of 2025, and lasted between 45 to 90 minutes. In an initial screening survey, participants provided brief demographic information as well as information regarding an estimate of their weekly playtime and their games of choice (Table 1). Seven participants identified as completely abstaining from gaming at the time of the study, with between 2 weeks and 2 years of sobriety. Four participants were still playing video games, but choosing to actively moderate their playtime. While participants were not directly asked how they came to be aware of the study, a majority of participants spontaneously mentioned finding it on the subreddit r/stopgaming. Participants were given the option to choose a pseudonym if they desired, and were assigned a pseudonym if they did not choose one.

Table 1

Participant/ Pseudonym	Age	Assigned Gender	Gender Identity	Addiction Status	Game(s) of Choice
Participant 1 “Aaron”	30	Male	Male	Abstinent	The Last of Us, Doom, Escape from Tarkov
Participant 2 “Peter”	27	Male	Male	Abstinent	Dota 2, Civilization V, Hearts of Iron IV
Participant 3 “PublicVoid”	40	Male	Male	Abstinent	World of Warcraft, Dota 2, Civilization
Participant 4 “Steve Shultz”	31	Male	Male	Abstinent	Overwatch, Dreams
Participant 5 “Luna”	34	Female	Non Binary	Abstinent	Final Fantasy XIV, Stardew Valley
Participant 6 “Bob”	28	Male	Male	Moderating	Smite, Yu-Gi-Oh, Elden Ring
Participant 7 “Dunkordietrying”	31	Male	Male	Moderating	League of Legends
Participant 8 “Sonia”	82	Female	Female	Abstinent	Freecell, Oh Hell, Bridge
Participant 9 “Mark”	37	Male	Male	Moderating	Age of Empires 4, Red Dead Redemption 2
Participant 10 “Sam”	21	Male	Male	Moderating	Rainbow Six Siege, Overwatch, Destiny, Dark Souls, Minecraft
Participant 11 “Dotty”	27	Male	Male	Abstinent	League of Legends, Call of Duty, Dark Souls, Expedition 33

Participants engaged in semi-structured interviews to explore their experience of Gaming Addiction in the context of meaning and belongingness. The following themes and subthemes were identified:

Table 2

	Themes	Subthemes	# of Participants who Endorsed
Themes Related To Meaning	*Spending Limited Time and Energy*		*9*
		Life is More Rewarding than Gaming	6
	Fun vs. Fulfilling Experiences		*7*
	Achievement Unlocked?		*8*
Themes Related To Belongingness	*Games are a Means of Socialization*		*9*
		Pleasant yet Shallow Online Interactions	4
	Gaming Hurts Real Life Relationships		*8*
Other Important Themes	*Gaming as a Hyper Stimulating Experience*		*9*
		Reward-Reinforcement	9
		Predatory Game Design	7
		Altered States of Consciousness	7
		Loss of Agency	7
	Escape and Avoidance		*10*

Meaning Theme 1: “Spending Limited Time and Energy”

Nine participants spoke about grappling with the reality of having limited time and energy to spend on meaningful pursuits, and that video games consumed an inordinate amount of this time and energy. Participants identified a variety of meaningful pursuits including attending college, learning new skills or hobbies, and spending time with loved ones as opportunities that could be squandered if they chose to prioritize their gaming. “Peter” (Participant 2) reflected on missing important coming-of-age milestones due to his addiction:

> There's milestones in your life that if you're inside playing games all the time, you just won't have. That's all. So I guess, I guess an easy example is I never went to my school’s high school prom because I wanted to play video games. Just things like that. They're not necessarily important. But, you’ll regret them. You know, not spending time with people who are now deceased because I was playing video games, there's just things like that. Just a little bunch of little things add up.

“Aaron” (Participant 1) shared about his aspirations to be a writer, and coming to terms with the reality that he often chose to play video games instead of sitting down to write. He described his feeling of accepting that he had to choose between gaming and pursuing his dreams:

> I felt like I came to a crossroads where it's like, “you've wanted to write for however many years, and the version of you that is a writer cannot exist with the version of you that spends this much time playing games. There's just, there's not enough time” … I can either be an extremely average person who just plays games, or I can take a shot at becoming this idealized version of myself.

“Sonia” (Participant 8) described the way that addictively playing card games like Freecell and online bridge led her to put off important tasks and left her sapped of energy when she finally got around to completing them: “Everything felt like I was doing it half-assed. I could postpone anything. I could bargain with myself and say, well, I can do this later. Now, later never came.”

Subtheme: Life Is More Rewarding than Gaming

Six participants reflected on their experiences in recovery, and how rewarding it was to redirect the time and energy that they used to spend on video games into other parts of their life. “Steve Shultz” (Participant 4) shared that since getting sober from video games, he had turned to tabletop roleplaying games as a way to connect with friends in a playful manner. While Steve found games like Overwatch and Monster Hunter: Iceborne to be incredibly stimulating, they also caused him to isolate himself from friends and family. Contrasted with these feelings of isolation, Steve described the satisfaction he felt from hosting regular game nights:

> Learning a new board game and teaching it to my friends is a joy for me because I get to introduce them to this hobby that I love. It has been so satisfying, inviting people over to my apartment and hosting these game nights. I have a game table. I have a board game room. I'm so blessed. That is just so helpful for me to, like, be a host. That is huge compared to being isolated [...] I'm able to find balance when I have friends over to play board games and table top role playing games. Hearing people's creativity is really satisfying, especially when they're not the best at it. And they’re just trying and you just love them for putting it out there.

This is the first allusion to an important concept which will receive further elaboration in subsequent themes (*Fun vs. Fulfilling Experiences*). There are multiple ways in which experiences can be rewarding, and many experiences such as video games may be enjoyable in the moment, but lack a sense of long term satisfaction that comes with other activities. In the context of limited time and energy, one of the most damaging aspects of Video Game Addiction is the opportunity cost that comes with gaming. Choosing to play video games means choosing not to do other activities that may provide more sustainable satisfaction in the long term.

Meaning Theme 2: Fun vs. Fulfilling Experiences

Seven participants described different ways in which experiences could be rewarding, with some being described as *fun* while others are described as *fulfilling* or

personally meaningful. Importantly, this distinction holds for experiences both inside and outside of video games. This is consistent with the distinction as found in Rogers' 2017 study, where fun is more consistent with moment-to-moment hedonistic pleasure, whereas fulfillment often focuses on richer, depth-oriented experiences (Rogers et al., 2017). In the present study, participants said that video games could provide both kinds of experiences. Fun experiences were typically associated with challenging gameplay, and often occurred in the context of competitive online multiplayer games, or single player games with a steep learning curve and repetitive gameplay. By contrast, fulfilling or meaningful experiences tended to be in the context of story-oriented single player games where the player can engage with the story in a poignant or provocative way.

"Mark" (Participant 9) described the way in which video games are an exceptional medium for conveying certain messages by compelling the player to make choices which impact the story. He recounted his experience playing This War of Mine, which forced him to reflect on the stability of living in the United States:

> I like games with really great stories or themes, or the way games can make you immerse yourself in a situation or experience. [They can] teach you something more, sometimes more than books or movies can by you making the decisions and being in a world […] Games like This War of Mine where you play as a refugee in kind of a vaguely Eastern European, you know, 90s, 2000s era country that slowly has a civil war happening. And you just have to survive, and it makes you make a lot of uncomfortable decisions. You know, do you steal medicine from neighbors when your kid is sick? Or do you help the family going by or do you hold yourself up? […] And it did make me feel really uncomfortable and new things, you know we're pretty comfortable here in the west in the US. So those are the kinds of experiences single player games can create, and I searched those out.

"Luna" (Participant 5) fondly reflected on her experience playing Final Fantasy XIV during a difficult period of her life, and the comfort she drew from the rich and engaging story:

> I saw myself in the characters and basically learned a lot about myself and how I felt I related to the characters. A lot of them inspired me too in the story. I guess it's like when people are reading a book, and they find that they really relate to the book's story and that it inspires them to do better in their own life. That's how I felt playing through it.

In both of these examples, Mark and Luna described their engagement with these games as predominantly positive. In the same way that one can find a sense of fulfillment in watching a film or reading a book, participants frequently recalled emotionally poignant experiences conveyed through the medium of video games. In one example, "Dotty" (Participant 11) shared that playing Expedition 33 helped him reflect on his unhealthy habit for ignoring his emotions:

> Ever since I played that game. I would say it definitely helped me reconsider, helped me reconnect with how I feel because I would just ignore my emotions. I would disregard everything. And that one game actually felt like I could connect with these people, these characters. And it kind of reminded me a little bit of what it's like to be human.

Meaning Theme 3: Achievement Unlocked?

Eight participants described feelings of accomplishment when completing challenging tasks within video games. Sometimes this included competing with other players online, and other times it included prevailing in single player games with steep learning curves. "PublicVoid" (Participant 3) described his experience of learning to play Dota 2, a notoriously competitive online strategy game. He recounted that a combination of the toxic community and the sheer difficulty of becoming competitive made his success even more rewarding:

> I would be very heavily competitive for a while there. So yeah, there was a period there where I saw it as a challenge at first. You know, when people are calling you names or calling me bad or stupid or noob […] When I first entered Dota, there was a very steep learning curve and it took a while. And there's a period where I was very poor at it. But the abuse, I guess you could say, motivated me to get over it, and then that makes it when you do finally overcome and you become one of the better players, it makes the seeming reward more rewarding. Even if it was highly dysfunctional. It's like an abusive relationship and finally able to step out of and then, you know, turn it around on itself.

"Bob" (Participant 6) described the sense of accomplishment he would feel when he would beat Youtubers on livestream:

> Every once in a while I would face off against youtubers, and I would beat them and I'd feel great because, you know, I beat them on the stream and that would be hilarious, right? […] Because sometimes they'd be arrogant. Sometimes they would think "oh yeah, these [random players] are all trash." And sometimes they'd just get showed up. And you'd be on a clip, just showing them up and doing tricks and whatnot. Which would be cool.

However, while these achievements provided momentary pleasure, participants often reported that their satisfaction faded quickly. When asked about what he would say to current Video Game Addicts, Bob reflected:

> I would ask someone, what are the achievements you want to remember yourself by? Because when I think of the achievements in the video games, I don't really care about them at all. Really, really, truly. Like quite literally every game gives you little trophies. Can't name any of them.

Belongingness Theme 1: Games are a Means of Socialization

Nine participants identified using video games as a tool to socialize with others. Often, this began in childhood, with participants recalling happy memories of going to friends' houses to play video games with each other. In most cases participants reported that they did not have a dysfunctional relationship with video games at that point in their lives. Rather than engaging in compulsive play, participants often recalled video games as one of many social activities that they shared with friends. Commonly, participants

reported using gaming as a way to stay connected to friends who no longer lived in their local area. Aaron fondly recalled playing online games with his friends after moving to college, and continuing to use them to stay in touch throughout adulthood:

> I would be playing, you know, for hours and hours and hours a day. And that was also a big part of it for me, because that's how I stayed connected with people I knew from my hometown […] But that's a way as I got older as, you know, my friend group had families and moved to various states and that was a way for us to stay connected. So that's kind of how I justified it to myself. And in that regard, it really never bothered my wife, because she saw it as a way for me to stay connected with my friends. And I really do appreciate that aspect of it.

In other examples, participants spoke about interacting with new people online and having positive experiences. Steve Shultz recalled that the game Overwatch gave him the opportunity to protect his teammates, which brought him positive feelings. This included defending teammates in the context of combat, as well as from harassment from other players:

> I got so much satisfaction and I felt important when I would help out people in this digital world. I met friends. I would defend people who would get yelled at by mean people. And I felt like I was making the world a better place by defending those who are getting screamed at or yelled at, and helping people feel better about that situation.

Subtheme: Pleasant Yet Shallow Online Interactions

Four participants reported that online gaming provided an opportunity to interact with other players socially, but that these interactions usually lacked depth. Luna was wary about socializing after losing her real-life friend group, and said that Final Fantasy XIV provided her the opportunity to socialize with people without having to make herself too vulnerable:

> I don't know if it's the case for other people, but for me, I have a little bit more anxiety, like I'm fine with talking to people on a surface level and doing games together. But if they want to talk to me again, that's a little nerve wracking, you know? My experiences losing my friend group really gave me social anxiety that I don't think I had before that. And now it's like, I just know that it's good for me to talk to people. I know that it's good to make friends. I don't want to right now. I just want to be by myself. So it was really nice because then I get a little bit of social interaction.

"Dunkordietrying" (Participant 7) maintained his relationship with some friends from college through playing League of Legends with each other online, where he described feelings of ambivalence. While the game was helpful in allowing them to maintain contact with each other after graduation, he noticed that his friends' own dependency on the League of Legends made it difficult for their relationship to extend beyond playing the game:

> I've got a couple of friends who are pretty much always on League. They've got their own issues with it. I've tried to talk to them about Video Game Addiction, and they're like, "nah, the world's too fucked up. I don't want to think about it." So I let them be. But you know, they're always on. They're always down to game for a time. And so it was just kind of, you know, another familiar friend group to go to every night. Another little community, although the actual conversation about stuff other than video games was pretty minimal.

Belongingness Theme 2: Gaming Hurts Real Life Relationships

Eight participants shared that their gaming had negatively impacted their relationships with family and friends outside of gaming. PublicVoid spoke about the extent to which his gaming had impacted his relationship with his daughter by eating up the time he got to spend with her on weekends:

> I struggle the most with the damage that it's done to my relationship with my daughter in particular. You know, when she was with me on the weekend, and I'm not attentive, right? I'm not neglecting her, you know, when she's here, but, I'm not attentive. I was trying to preoccupy her. “Can you watch a movie? Can you do this? Can you wait 10 minutes?” Just a lot of trying to buy minutes or hours or whatever it was. And it's a very sad experience.

Dunkordietrying compared his relationship with video games to his relationship with alcohol, both of which caused social problems in ways he did not expect. Importantly, he described how his perspective on gaming changed after entering recovery for his drinking:

> I think with more clarity and more self-perception came the realization that gaming does in fact impact myself, my life and other people around me more than I initially recognized. And that came also through going to programs for alcohol where it kind of made me realize: Sure, I'm just at home drinking, and I felt like I wasn't hurting myself. But I was in fact hurting those around me because I was not present, because I was more prone to anger, and video games are kind of the same way. I'm just not there. I'm not present for anybody. People asked me to hang out and I bail or don't say anything, or just ghost them. And I think I realized more that it truly was a problem. It truly was reducing the relationships I had with my friends and my family.

Dunkordietrying illustrates that it is not simply the fact that video games take away time that could be spent with others. While this is an important component to the impact of Gaming Addiction on relationships, there also may be ways that it negatively impacts the addict’s mood or sense of presence in other activities. Dotty recalled that he had to stop playing Call of Duty competitively because it was leading to anger outbursts that he struggled to control:

> Most of the games I've played have been pretty detrimental to my personality. Like, when I was playing Call of Duty for six, seven hours, it was enabled further by this competitive team I was part of. It was like three other people that were just as into this game. And in that game, you make a silly mistake, a simple honest mistake, and it's really easy to start screaming every word you could think of. It's really easy to even go as far as to punch walls or take out that anger on things that shouldn't, hasn't got anything to do with it. And then outside the game, you would find yourself carrying that same anger onto really innocent or simple things that happen in real life.

Other Important Theme 1: Gaming as a Hyper Stimulating Experience

Nine participants identified specific features of video games and the gaming ecosystem that facilitate addiction when compared to other activities. These included factors such as the ubiquity of computers, or the convenience of gaming compared to other hobbies.

Multiple participants also observed that the round based nature of certain games lent itself to compulsive play. This was often referred to as “the loop”, and includes repetitive gameplay mechanics that allow players to frictionlessly engage in the same experience with no clear ending. In the context of competitive online games, this includes the ability to immediately cue for another for another match after completing one previously. For single player games, this often included being able to resume from a save point after dying. In both cases, this allowed players to prolong their gaming indefinitely: win or lose, it is trivially easy to try just one more time. Unfortunately, this ease at which players can immediately choose to play another round often leads to them playing for longer periods than they initially intended. “Sam” (Participant 10) spoke about how he was able to justify playing an additional round of League of Legends regardless of if he won or lost:

> It feels really rewarding to do well because those games go for like 40-50 minutes, and I feel like when I play that game I get in a kind of competitive mindset where I'm like “Oh, I can't end on a loss.” So after I say that I play another game and I win, I'm like “Okay I'm doing good, I’m gonna keep on playing.” And then it’s just kind of like whether I win or lose, it doesn't even matter, I'm basically set on playing a game. And it sucks because I acknowledge that but then I continue to do it. I don't know, that game does something to me.

Video games also offer a consistent challenge that can be hard to replicate with other activities. Sonia spoke about how she kept coming back to her card games because she could easily find other players online or play against the computer to keep her on her toes:

> I don't like to win all the time, that gets boring. But [the game] just keeps you on your edge. I used to coach soccer and I felt the same way. I mean, you know, when I had a team that was either winning the whole season or losing the whole season, that was not any fun. But just playing on the margin? That's fun.

Mark recounted how the ease of being able to switch between games made it tempting for him to fall into addictive experiences, even when he wanted to focus on enriching ones:

> So much of what brings me back into games is I hear or read about a game that seems really like it'll be an enriching experience. You know, like [This War of Mine] or the space game Outer Wilds. So I'll want to get back into gaming to play it, but then there's the whole ecosystem around it. So if I play Outer Wilds on my Playstation, well there's every other game ready to go and just click away.

Some participants noted that their Gaming Addiction escalated during the COVID-19 pandemic due to being forced to work and study from home. The nature of remote work forced participants to spend more time on their computers than previously, which had the unintended consequence of making it easier to fall into the temptations of gaming. Aaron recalled the trouble he experienced from working in the same space where he would game:

> I don't think it was a problem really until I became work-from-home. I think that's when it became an untenable situation. Because, you know, my work computers here and one foot away is my gaming computer. It's like my brain could not, like could not make that distinction.

Dunkordietrying compared playing video games to other, more enriching activities, and described how the ease at which he could boot up a game often made it more tempting than other activities:

> Other activities I do at this point are studying for a masters program, doing tree work, going out to chat with friends, not necessarily knowing where to go, going to hang out, going outdoors, going biking, going climbing. All of those things just take a little bit more mental power and figuring out what to do, where to do it, when to do it. And I think that's one of the bigger issues I have, especially as I'm not the best at planning. I definitely have a little bit of ADD undiagnosed, but I'm very energetic and unable to keep focus for too long without a very and very vigorous task at hand.

Subtheme: Reward-Reinforcement

Nine participants related their Gaming Addiction to exploitations of the reward-reinforcement pathway, including the release of neurotransmitters such as dopamine or endorphins, and the creation of neural pathways that motivated them to continue gaming.

Steve Shultz, referring to video games as “his fix”, recalled how he was able to perpetually switch to new video games when he got bored, which he conceptualized as allowing him to maintain a steady supply of dopamine:

> I'd have a bunch of games I could cycle through. So like when I'm bored of this game, I just play Game B when I'm bored of Game B. I play Game C. And then by the time I got to game G, I can go back to Game A and then it's like I'm fine. I have all the dopamine in the world and I don't have to go out to a movie theater and watch a movie or go bowling or go ice skating because I have my dopamine.

Sonia said that the release of dopamine was so potent that she would feel gratification even when she opened the game or thought about playing:

> Lord, that I mean, that's the whole thing, the dopamine hit. And you know, I would even just get on, and just seeing the colors that were coming up, just typing in the names of the games would give me a dopamine hit […] Just the anticipation […] I mean, I feel pleasure right now when I'm talking about it. It feels like I'm talking about an old pal.

Three participants identified the role that substance use played in their Gaming Addiction, and that consuming substances such as alcohol or cannabis allowed them to become more immersed in their gaming. Dunkordietrying spoke about his experience mixing alcohol and drugs with competitive gaming from the context of accessing additional dopamine:

> I turned 21. I was able to drink alcohol. That meshed very well with gaming as well. Your brain gets tired after the first three hours of gaming, and you start to, your dopamine isn't really able to recover itself anymore. And so you need something to feel good again. And so you start drinking. So I do know that drugs along with that. And then, of course, you can keep going for many, many, many hours and you don't have that same sort of negative spike or a negative crash.

Subtheme: Predatory Game Design

Seven participants identified specific elements of video games that they considered predatory, and that they believed represented deliberate attempts from game designers to incentivize addictive playing. Sam spoke about the industry trend towards live service gaming, which includes consistently adding rewards that are only available for a limited time in order to incentivize gamers to play regularly. He said that this often motivated him to play online games due to the fear of missing out (FOMO), even when he wanted to focus on single player experiences:

> It's reinforced a lot by these newer game models that have live service type of games. So they have a lot of FOMO, like battle passes. You need to play during this time to get these rewards or else you'll never see them. So I think that also contributes, it makes me feel obligated to play these games, even though sometimes I'm just not really interested.

Some participants identified that studios use enticing sounds and colors to make games more attention grabbing. Steve Shultz said that the sound design in Overwatch often made him feel compelled to play additional matches, which he believed to be deliberate due to the game studio's history of making notoriously addictive online games:

> It just never ends […] When you play a match, it plays this music that is like really anxiety producing. And it kind of *makes* you want to play the next match. If it was a really close loss, you want to play. I'm sure they use psychologists to make their game more addicting because it's Blizzard.

When talking about the game Smite, Bob described how the sound design combined with the certainty of enticing gameplay led to him play for up to 10 hours each day:

> The game is designed to be addictive. And I understand because of how they make all the sounds and things feel. Like once you get one game and it's good, you know can get another game and it's going to feel good. And it will. You'll just keep going because of how the game is designed to keep you going […] You kind of just pick up on the next one. You immediately just go again. You just re-queue and you could just do that for hours.

Subtheme: Altered States of Consciousness

Seven participants reported entering altered states of consciousness when gaming, analogous to consuming drugs. Sam, having grown up in a quiet suburb, shared that challenging video games allowed him to consistently access feelings of excitement:

> One of the things that I like is the adrenaline that comes with it sometimes. So like, when I'm playing Rainbow Six Siege, sometimes it's me versus three or four other guys and I have to like, you know, clinch it up for the team. And it gets my blood rushing and gives me a sense of euphoria. Or if I'm playing Dark Souls, it's the rush from fighting a boss, and then like after a certain amount of time learning its mechanics and beating it, I feel like I gained a lot of pleasure from those kind of experiences that kept me hooked for a long time.

However, this level of intensity cut in both directions. Some participants reported experiencing painful physiological withdrawal symptoms upon quitting. PublicVoid remembered:

> I remember being at work and feeling like I got punched in the stomach. It was like I was mourning a friend. It's like a friend punched me in the stomach. And I was just, I had this pressure in my chest and in my throat and it was mourning. I was mourning the idea that I would never do this again.

Luna, being in her first few weeks of abstinence, recalled reading online posts about withdrawal symptoms and being surprised at just how varied they could be:

> Somebody on the stopgaming subreddit, they posted a really good summary of withdrawal symptoms from gaming stuff. And I have followed that almost to the letter without even realizing it. Because the other day I was thinking, “Boy, I feel so terrible.” And I had bookmarked that post and I opened it and lo and behold, there it was. It was saying, “You know, after two weeks, you start to feel this sense of emptiness and numbness.” Yep. Me to a T. “The first week or two, you feel really irritable.” Yep, as well. ”It screws up your sleep.” Yep. So it's been a tough few weeks. Not been a good time.

Subtheme: Loss of Agency

Seven participants conceptualized the development of their addiction through an eventual loss of agency with respect to games. Consistent with research on shifting neural pathways, these participants reported that over time, their gaming progressed from voluntary choice to compulsive use (Everitt et al., 2008; Liu et al., 2017). When asked to describe how his relationship with gaming changed over time, PublicVoid recalled that his motivation to play changed from childhood to adulthood, and continued to change after deciding to get sober:

> It's difficult to adequately describe everything that's happened. From a young age it was more about enjoyment and friendships. And then as I've entered adult life, it's become more about compulsion and escape and nostalgia. That's not to say that enjoyment was absent from it, but it became more absent. And in the form of relapse, if I were to game now, it would be markedly different. I wouldn't even enjoy it, it's hard to explain. It's like entering sobriety kind of ruined the gaming experience for me. I think it's because in my heart I don't want to do it anymore

Aaron spoke about how coming to terms with his Video Game Addiction made him realize that there are many places in his life where he is being stripped of his agency:

> It has opened my eyes to the other ways in which like my attention and my will and my desires are being bent without my guidance, you know? Quitting games has helped me to realize there are other things in my life that are kind of dominating my attention that are kind of dominating my focus and my ability to choose things without my consent. I can't tell you how many times I pick up my phone and open up YouTube when I have no plan or no thought to do it.

Also extending beyond video games, Sam realized he had an unhealthy relationship with technology in general during the COVID-19 pandemic when he found himself constantly consuming some form of content. Part of this, he contextualized through progressively making fewer active decisions about his media consumption:

> I feel like any time I had some sort of dead time where I had to be alone with my thoughts, especially during the pandemic, I had some sort of stimulation. So I had my AirPods in all of the time. I would listen to a lot of YouTube videos. And then it turned into TikTok, which passively, like I didn't realize I stopped actively choosing what I was watching anymore. I just passively let the algorithm pick for me. I feel like I had lost a lot of my agency then.

Other Important Theme 2: Escape and Avoidance

Ten of the eleven participants endorsed that one of their primary motivations to game was as a form of escapism or avoidance. The form that this escapism took varied by individual, but all ten participants reported using video games as a way to escape negative feelings at some point. Bob was unexpectedly diagnosed with a chronic

disease as a young adult, which severely impaired his ability to leave his house. He said that one of the most appealing things about Smite was his ability to tune out the rest of his stressors and focus on a shared goal:

> I wasn't looking to like all the things that I was missing out in life because I was just playing a game. Once you're playing the game, nothing else really matters. Because for like for these 30 minutes, all that's in the world is you and these other people, trying to kill the Titan.

Sonia shared about her experience being diagnosed with ADHD as an adult, and how she found herself intoxicated by the deep state of immersion when playing games:

> I will guarantee you many of the people you talk with will be ADHD. It gives you the ability to focus on one thing. Just on that game. And you lose everything else. This delightful hyper focus. I don't think that I'm alone with that.

Luna spoke about her love of the lore and aesthetics of the Final Fantasy franchise, and how it provided her with a much needed reprieve from difficult events in her personal life:

> I think it was really nice to be able to escape into a complex, beautiful fantasy world with gorgeous graphics, beautiful soundtrack, lots and lots of things to do. Pretty much it was like jumping into another world and not living in this one. And I felt like that's what I needed for a while.

Dunkordietrying reflected on the stress he felt when keeping up with current events, and how he believed it fueled a desire to escape:

> And I think it's true that we’re in a world that we are sort of more scared to go out, where we're shown all these poor images in the news that makes us not want to leave. It makes us not want to be in the world. And so we try to escape them. We try to improve ourselves. And we feel like we're improving ourselves while we're escaping. I think that's extra dangerous.

PublicVoid described how his perfectionist tendencies often made it difficult to deal with the ambiguity of life, and he would retreat into games due to the certainty he could find:

> In these virtual worlds, even though they may be large, they're still finite and the rules are finite. In a sense, there is a perfect answer that I may be going for. And I think that sense of perfectionism that I wouldn't be able to find in the real world. I can solve at least this particular problem, in a virtual world. And it's misplaced, you know? The better approach should be to accept that things are imperfect and, you know, deal with the difficult feelings, deal with the difficult emotions, deal with not being the absolute best, and all those things.

Section V: Discussion

The goal of the present study was to explore the potential role of meaning and belongingness in the context of Video Game Addiction. This was investigated through eleven in-depth semi-structured interviews with self-identified Video Game Addicts. All eleven participants were involved in actively trying to recover from their addiction in one form or another. For seven participants, this meant complete abstinence: they had decided that their relationship with video games had reached a point that they could not safely play video games in any quantity without a significant negative impact on their lives. For four participants, they also recognized the damage that addictive play had on their lives, but were instead focusing on a harm reduction approach that included reducing or eliminating the most negative kinds of gaming, while still playing occasionally.

Participants were asked to describe the nature of their addiction, how it changed over time, and why specifically they considered themselves to be addicted to gaming. Using the approach of theoretical thematic analysis, the interviews and subsequent data analysis were centered around how video games provided or interfered with meaning and belongingness. Seven themes and six additional subthemes emerged from the interviews. Three of the themes related to the ways in which video games can function as meaningful pursuits, or in how they impair meaningful pursuits elsewhere in life. Likewise, two themes emerged relating to the way that video games can facilitate social connection in some contexts, but harm relationships in others. Two additional themes emerged that were not specific to either meaning or belongingness individually, but spoke to why video games can be such captivating experiences, which therefore impair the addict's ability to find meaning and belongingness elsewhere.

This chapter will discuss the themes and subthemes observed in the present study within the context of the existing body of literature. Additionally, it will discuss the

strengths and limitations of the present study, as well as suggestions for further research. Finally, this chapter will conclude with actionable suggestions for minimizing the risk of Video Game Addiction, and maximizing the potential for recovery.

Themes Related to Meaning

Three main themes emerged related to meaning. *Spending Limited Time and Energy* related to the way that video games can consume time and energy that could otherwise be spent on meaningful experiences. *Fun vs. Fulfilling Experiences* explored the different ways in which experience can be rewarding, and how some may be more meaningful than others. *Achievement Unlocked?* spoke to the way that video games can provide a sense of mastery or accomplishment. One of these themes included an additional subtheme.

Meaning Theme 1: Spending Limited Time and Energy

This theme relates to a prominent existential dilemma: each of us possess a limited time to pursue the things that we like, which compels us to make the difficult decision of what sorts of activities we want to prioritize. Nine participants expressed that this dilemma was an important component to how they conceptualized their addiction, with many identifying it as one of the primary factors to why they decided to quit.

Aaron spoke about how his priorities had shifted after becoming a father, and that he wanted to prioritize spending time with his family while also pursuing his dream of becoming a writer. He reflected on the insidious way that small decisions he made day-to-day were, in reality, consuming substantial amounts of time: “That is just time that you can't get back. And I think we don't understand how these little decisions over time accrue interest.” This is consistent with the theme of push and pull influences found in Shi’s 2019 study, where the participants found that one of the most insidious elements of gaming was how effortlessly it filled unstructured time (Shi et al., 2019). Some participants in Shi’s study also found that having meaningful activities was an effective

way to limit playtime, with some participants specifically taking up opportunities like volunteering to reduce the time they spent playing video games.

Two participants, Bob and Luna, unexpectedly came down with chronic illnesses in young adulthood, which substantially reduced their autonomy. Bob was diagnosed with a rare condition that produced extreme light sensitivity, essentially making it impossible for him to go outside, thereby forcing him to drop out of college. Bob recalled that gaming was never intrusive before his diagnosis, but that he quickly started playing for upwards of 10 hours a day when he was unable to pursue his education. However, after successfully undergoing treatment that allowed him to return to school, he cited it as his primary motivation to get his gaming under control:

> I've been doing treatment. I've been going back to school. So I'm like, I have to get my life together. And part of that is going to be to reducing the amount of video games I play. So while before I would play all the time, I knew that to get through school I have to reduce it. And I want to eventually, you know, just live life relatively normal as much as I can.

This appears to be consistent with two studies which found that college students who reported less meaning in their lives were more likely to abuse substances (Csabonyi & Phillips, 2020; Kurtuluş & Elemo, 2023). The suggestion here is that a lack of meaning leads to Frankl's existential vacuum, which in turn leads to drug abuse (Frankl, 1962). In Bob's situation, it is quite clear that when he was suddenly yanked away from school, his gaming quickly escalated to fill the time that he once spent in a meaningful pursuit. Conversely, once his treatments were able to increase his autonomy enough to return to school, he was faced with the decision on how he wanted to spend his time. This lends credence to the idea that like drugs, video games can be used to cope with a lack of meaning. It also emphasizes the positive role that meaningful activities can play in recovery.

Subtheme: Life is More Rewarding than Gaming

In addition to video games taking up an inordinate amount of time and energy, six participants specifically identified that they found it more rewarding to direct their efforts towards non-gaming pursuits. Similar to Bob, Luna was unexpectedly diagnosed with a chronic condition in young adulthood that severely impaired her ability to easily move around the world. While she initially turned to video games as a means to cope, she eventually made enough progress in managing her illness that she was able to resume traveling and playing sports. Like Bob, she also credited her desire to quit gaming to wanting to embrace her freedom and spend that time discovering herself:

> I have the opportunity to really discover my life. That was also what part of what inspired me to quit gaming because I thought, you know, if I spend all my time doing this, I'm never going to find me. I'd rather play my real life.

This subtheme has substantial overlap with *Fun vs. Fulfilling Experiences*, where video games often are thought of as fun experiences which consume the time that could be better used for more fulfilling pursuits in life. Luna and Bob's relationship with illness shows how access (or lack of access) to meaningful activities outside of gaming can impact how gamers prioritize their experiences. When Bob and Luna's autonomy was curtailed, they found video games to be a way to pass the time that they previously spent on activities like school or exploring the world. However, when they were again able to leave their homes and pursue their more aspirational goals, they found these achievements more satisfying than the transitory enjoyment they experienced while gaming. Similarly, Aaron reflected on how his abstinence had afforded him the opportunity to focus on his writing: 'I can tell you right now over the process of writing that book, it was not as much fun as playing video games every night with my friends. But it was infinitely more rewarding."

Thankfully for Aaron, he had many positive things in his life that helped motivate him to quit: he had a family for whom he wanted to be present, and aspirations for the future. This is consistent with Ballaert's 2022 study on turning points in addiction, where becoming a parent was one of the most common life events that inspired sobriety. However, this also implies that addicts who do not already have meaningful activities outside of their gaming may struggle more than those who already have places to redirect their energy.

Meaning Theme 2: Fun vs. Fulfilling Experiences

This theme relates to how experiences can be rewarding in different ways, that not all enjoyment is equal. This theme was directly inspired by the distinction drawn between fun and meaningful experiences in Rogers' 2017 study (Rogers et al., 2017). In Rogers' study, participants identified that some video games are predominantly fun, which tends to relate to factors like engaging gameplay or overcoming challenges. This was contrasted with meaningful or fulfilling experiences, which in the context of video games often related to engaging with compelling narratives or characters. In the present study, participants tended to describe meaningful experiences as having a lasting impact beyond the act of playing the game, while fun experiences tended to be more transitory. Mark recalled that while he spent lots of time playing Age of Empires 4 online, his satisfaction quickly faded when the match ended:

> I have more memories and more positive feelings [for] a more enriching experience, versus I don't remember any of my Age of Empires 4 games. Maybe like the last one or two that I played, or something like that. They're short and you're just kind of onto the next one. There's TV that's like that.

Here, Mark also alludes to the fact that this comparison applies to activities outside of gaming. In the present example of television, there are shows that can provide momentary enjoyment with minimal staying power, while others can impact the viewer on

a much deeper level. Mark goes on to describe how shows like Game of Thrones can provide a level of depth that lends itself to meaningful experiences:

> There's been really great TV like Game of Thrones. It's a great example that's real long-form. It's still entertainment, but it's so much more thoughtful. All the different, you know, cities in Game of Thrones, there was politicking and everything, if you haven't seen that. It's usually that deeper and broader perspective that gets [you] more engaged. It doesn't have to be just educational.

In this comparison, there appears to be an implicit preference for fulfilling experiences over fun ones, particularly in retrospect. This tension is present in many areas of modern life: we have access to such a wide variety of experiences that we are constantly tasked with deciding whether we want to do something that is fun in the moment, or whether we want to direct our attention to something that we will find more meaningful in retrospect. At any moment of our free time we can choose something that gives a sense of fulfillment such as learning a new skill or reading a novel, or we can choose something that is more hedonistically pleasurable such as scrolling through social media or watching our favorite guilty-pleasure television show. There also appears to be an asymmetry as to how we value fun and fulfilling experiences when we anticipate them compared to when we reflect on them. This could be thought of as analogous to diet, where in the long run we may want to consume healthy, nutritious foods, but find ourselves tempted in the moment by junk foods that provide a quick hit of pleasure.

This asymmetry presents one of the ways that video games can be an insidious medium for addiction. Somebody who is on the fence about quitting video games may continue to play due to the potential for meaningful experiences, but find themselves getting sucked into the fun ones. Aaron reflected on how this tension was present in his addiction, where his love for games like The Last of Us made him hesitant to quit gaming entirely, yet he found himself playing story driven games only a small portion of the time:

> The power of truly good media is that you feel like you're a different person after you experience it. But if you look at how the time was spent, probably 90% of the time I spent playing games would be on just fun games. And it's the same thing with movies. Like, would you rather see all of the Avengers movies, or would you rather see this one really good movie that rocked you? Well, yeah, you're going to pick that one good movie. But if you look at how you're spending time, 90% of the time you're spending is just watching very surface level fun stuff. And that's how it was for me playing. Like, despite what I really enjoyed the most, I was mostly just playing stuff that was just to have fun.

In many ways, this is similar to the ambivalence that participants identified in Eriksen and Hoeck's 2022 study of alcoholics in Denmark (Eriksen & Hoeck, 2022). In that study, participants emphasized that their relationship with alcohol was nuanced, and consisted of both positive and negative experiences. In particular, they identified the joyful experiences of drinking with friends to be one of the biggest barriers to quitting. Similarly, video game experiences are not monolithic. To gamers, some video games represent something much more than pure hedonistic fun. However, the decision to quit gaming entirely requires gamers to give up these personally meaningful experiences in addition to the maladaptive ones. PublicVoid recalled that for him, this tension manifested in the form of grief for his positive memories:

> I think I was grieving a lot of nostalgia. I think it was all of the good feelings. It was a sense of comfort. It was just pretty much every feeling all at once, basically. It was the addictive mind, I think, holding on to the benefits that I got. I don't think I was mourning the loss of time. I don't think I was mourning the dysfunction.

PublicVoid is alluding to an important concept as identified in Ivsins and Yake's 2020 study: addiction is not unilaterally a negative experience. While most research tends to focus on the negative elements of addiction, it is also important to remember that addiction can provide positive experiences, and that choosing sobriety means giving up both positive and negative experiences. In the context of the present study, the

fulfilling experiences that video games seem uniquely able to provide also appear to be a major barrier for the addict who is on the fence about quitting.

Meaning Theme 3: Achievement Unlocked?

This theme relates to the way that video games can provide players with a sense of accomplishment or mastery. This, again, appears to be an area where video games are uniquely placed with respect to traditional, one-way forms of media. Unlike more passive forms of media such as television, video games require active input from the player in order to create the experience. Some video game developers intentionally design their games to be extremely challenging, requiring extensive practice to master. One prominent example is the developer FromSoftware, whose games like Dark Souls, Bloodborne, and Elden Ring require players to master extremely technical battle mechanics. Dotty spoke about how achievement can be a double edged sword, where it can provide extreme satisfaction, but at the cost of drawing the player back into the loop:

> There's the goal, there's this much you have to do. And it's a safe space to fail. You can fuck up as many times as you need to. Like Dark Souls. I don't know if you play that game, but it's a game where you have this impossible-to-kill monster and you have infinite lives. And every single death, you just feel like you're inching closer to defeating it. And then once you finally do it, you feel this sense of like, “Fuck yeah, I finally did it, let's go.” And then that kind of, that's multiplied by a magnitude for the next boss or for the next skill or for the next level or for whatever's on the agenda.

Sam also reflected on the satisfaction he got from defeating challenging bosses in these games, and how he felt the challenge taught him perseverance:

> I feel like a really meaningful thing for me that I picked up from all of these games was, but especially Bloodborne, but all of the Dark Souls like Fromsoft games, was patience. I take my time and I learn and I take my losses to become better and then I eventually defeat my boss or opponent. So I feel like it taught me a valuable lesson in just keep trying like it gave me the confidence to take a loss and then learn from it.

In both of these instances, it seems as though participants' addictive tendencies are maladaptively exploiting what is typically an adaptive human drive, and using video games as a vehicle to do so. People like to be good at things, and the pleasure we feel from improving a skill incentivizes us to continue to hone that skill. Generally speaking, perseverance is one of the most valuable attributes that a person can cultivate, as it can be applied to learning any number of things. It seems that one of the ways that Video Game Addiction can take root is by preying upon our innate desire to achieve and transmuting it into something dangerous. This is consistent with Melodia's 2022 study, which found that one of the groups of Video Game Addicts was primarily achievement oriented, with success in video games acting as a surrogate for real-life success (Melodia et al. 2022). This also relates to the theme *Spending Limited Time and Energy* and the subtheme *Life is More Rewarding than Gaming*, where the cost of this sense of achievement comes from the opportunity cost of missing out on "real-life" achievements. As described by DunkOrDieTrying, "It makes you feel like you are improving in life when in fact you're sitting there doing nothing."

This is one area where online gaming is especially dangerous, as it incorporates ranking systems and leaderboards which allow you to quantify your skill compared to other players. Video games can track player statistics with extreme precision, which in some cases allows you to see exactly where you are ranked compared to all the other players in the world. Being an elite player in a popular online game is no small feat, and could be considered analogous to being an elite athlete. However, the obvious contrast is that athletes do not appear to become addicted to sports in the same way that gamers become addicted to their games. The sad truth is that video games may be consuming the time and energy of an otherwise ambitious group of people, for very little reward outside of the game. Sam expressed regret about returning to the same video games year after year instead of putting his energy into something more valuable:

> With gaming it feels more like the loss of time than anything else. It feels like you're throwing away all of your time and all of your effort into a number, something on the screen. I feel like sometimes I'll regret it because I could have spent that time putting my effort into something I want to learn about. It's something that I've been doing for years and years, and it's not any different than it was the year before.

Themes Related to Belongingness

Two main themes emerged with respect to belonginginess. *Games are a Means of Socialization* explores the way that gaming can serve as a prosocial activity, helping gamers make new friendships and maintain existing ones. Interestingly, *Gaming Hurts Real Life Relationships* is essentially in direct opposition to this, and focuses on the numerous ways that video games negatively impact relationships. One of these themes contained the subtheme *Pleasant Yet Shallow Online Interactions*.

Belongingness Theme 1: Games are a Means of Socialization

Many of the gamers in the present study reported that video games served as a valuable component of their social life. Some participants recounted the important role that video games played in their childhood friendships, reminiscing about going over to a friend's house to play cooperatively or competitively. Sam spoke about how he felt video games were a core tenet of the way he socialized with others, saying:

> I feel like gaming is one of the largest aspects of my social life. A lot of my friends and I connect through games. During high school and stuff, many of us didn't have licenses or anything because we just played together. Like that was our form of socialization with one another. So, gaming has always been a really big part of my social life. It's helping connect with friends and it's helping to connect with family. It helps me connect with new people that I don't know because we have that bond of shared experiences. So I've made some friends through League of Legends, I've made some friends through Overwatch. I've made some friends through Destiny.

In this example, Sam uses video games as a way to interact with his friends from school, but also uses games to meet people online. Sam also alludes to how the

convenience of video games makes it an ideal way to socialize. It allows players to interact with each other from their own homes, which reduces the impact of physical distance. In Sams' particular case, it allowed him and his friends to overcome the inconvenience of not being able to drive themselves. In a similar vein, Luna mentioned that this is especially helpful for people with disabilities, as online gaming allowed her to "go out" and socialize without having to leave her home:

> I have a lot less energy than most people. I get sick much more easily, things are just trickier. And so gaming provides for me that way. When it's a Friday night and I'm exhausted and can't go out because I physically don't have the energy, it provides a way to go out. I think the Friday before I stopped gaming, I ended up virtually dancing around with a bunch of people in the town square, the virtual one. And it's just a really fun way of doing things when you are sick or disabled or chronically ill […] I have other friends who are in the same boat as me and a lot of them like to game, because it provides a way of experiencing life in the world for people who can't always do that.

This is similar to the observation from Murray's 2022 study, which suggested that autistic people may be drawn to video games as a way to socialize with less social pressure (Murray et al., 2022). Video games provide a structure that removes some of the ambiguity of face-to-face social situations, which may be attractive for people who struggle with subtle social cues. Games can also be an interest in themselves, and provide a way for people to interact through a shared hobby.

In addition to being convenient, video games provide a way for people to cooperate or compete in a shared experience. Halbrook's 2019 study provided evidence that the way that players choose to interact with online games can impact the risk of addiction (Halbrook, 2019). As compared to the potential negative interaction between achievement striving and gaming shown in the *Achievement Unlocked?* theme, Halbrook provided evidence that online gamers who played primarily for social interaction had

lower levels of anxiety and depression than gamers who played primarily for achievement.

As is the case with *Fun vs Fulfilling Experiences*, the social potential for video games can also serve as a barrier to sobriety. Similar to using substances, video games can be a *component* of a healthy social life, but they become problematic when they are the only way for a person to socialize. This is similar to Palmer and Daniluk's 2007 study that investigated the ambivalence in problem drinkers who relied on alcohol to connect with others (Palmer & Daniluk, 2007). Using alcohol as a social lubricant is not intrinsically negative in moderation, but becomes problematic when somebody becomes reliant on it. This reliance makes it even harder for the addict to finally act on their desire to quit, as it requires them to give up positive experiences along with the negative ones. This highlights the need for conceptualizing addiction in a way that acknowledges the way it serves an addict. Any form of addiction has negative components to it by definition, but it is not unilaterally negative.

Subtheme: Pleasant Yet Shallow Online Interactions

This subtheme adds nuance to the overarching description of video games as a positive social experience. It speaks to a pattern that four participants identified: while they were able to have positive online interactions with other players, these interactions were often surface-level, and tended not to lead to friendships outside the game. Comparing again to substance use, this could be analogous to casual social interaction with other patrons at a bar that is fun in the moment, but does not lead to long term friendship. Baumeister's theory of belongingness posits that humans do not merely have a drive for social interaction, but for lasting intimate relationships (Baumeister & Leary, 1995). In this context, the social interactions that addicts reported in the present study may offer momentary social satisfaction, but fall short of satisfying their need to belong. Importantly, this theme was not universal, and two participants reported developing close

relationships with people they met online. Despite this, the overall picture suggests that while video games can be a vehicle for interacting with others, many people find it unfulfilling. This could be another example of the perils that come from becoming overly reliant on video games as a social tool. Somebody whose social life is confined to online gaming will likely feel they are missing an essential component of their relationships.

Belongingness Theme 2: Gaming Hurts Real Life Relationships

Many participants noted that video games significantly hurt their relationships outside of games. Perhaps the most important element of this theme is that it seems to directly contradict *Games are a Means of Socialization,* speaking to the ambivalence that addicts feel with their relation to gaming. While on one hand video games can be a powerful social tool, they can also seriously damage relationships in multiple ways. The two primary ways that participants described this damage was through video games occupying the time that they would otherwise spend with friends and family, and by reducing their ability to remain present in other parts of their life. Dotty reflected on his particular cycle of addiction, which would lead to video games consuming more and more of his attention, even in moments when he was not playing:

> I would still go to work, but I would not really be there. I would just be moreso excited to leave work. Interacting with friends I was not really always there. I was just kind of hoping to get it done with.

LIkewise, Bob recalled that one of the ways he could tell that his Smite addiction was getting out of hand was the way it caused him to de-prioritize his relationships with his family:

> I prioritized Smite over quite literally everything else in my life. So [my family] would get angry at me for not doing the dishes, not generally looking after the house. Anytime they needed me to do something, I was gaming. And quite frankly, playing the game wasn't as important as doing the things they needed me to do at the time.

This is similar to the idea of push and pull influences identified by Video Game Addicts in Shi's 2019 study (Shi et al., 2019). In Shi's study, gamers reported that the negative impact their gaming had on their relationships was one of the most prominent incentives to limit their playtime. At the same time, the gamers in Shi's study could not always rely on this incentive to regulate their play, and they would often find gaming taking precedence over their relationships. Some participants spoke to their ambivalence explicitly, with gaming simultaneously serving as a means of connection and isolation. This ambivalence closely mirrors the ambivalence described by alcoholics in several studies, who found alcohol facilitating feelings of social connection and warmth on some occasions and leading to isolation in others (Eriksen & Hoeck, 2022; Palmer & Daniluk, 2007; Wasmuth et al., 2014). For participants in the present study such as Bob, these feelings of isolation became an important catalyst for change. PublicVoid shared that improving his relationship with his daughter was one of the main reasons he decided to get sober, and the improvement in their relationship motivated him to stay sober:

> I talked to her this week and said "[Daughter's name], I haven't played games in over 100 days. Do you like spending time with me more now or do you like me spending more time when I was gaming?" And she was like "Now, because, [before] I couldn't get you off the computer." So if there's one silver lining maybe, she's able to see, without having to experience the full effect of an addiction herself, she can see what it does.

The trajectory of PublicVoid's relationship with his daughter provides an important message of hope for those still in the trenches of Video Game Addiction. As was the case with participants in Bellaert's 2022 study on turning points in addiction, PublicVoid cited the risk of losing his relationship with his daughter as the final metaphorical straw in motivating him to change (Bellaert et al., 2022). He also credited the social support he found in Gaming Addicts Anonymous (GAA) to be integral to realizing he was not alone in his experience:

> I entered the meeting and it was very liberating because meeting people is so important when it comes to overcoming these things like addiction, it helps so much. When I was able to be in the presence of other people who have had a similar experience with me […] I wouldn't say I *know* these people, but it's like I'm seeing these people on the other side. These are people that I maybe communicated with at some point, coming out the other side. And that was a very powerful thing for me.

Other Important Themes

In addition to the themes identified thus far, participants spoke about two additional themes that could not be easily categorized into relating to meaning or belongingness. While each of these themes do not fall solely into one category or the other, they are important to understanding why somebody would choose to play video games past the point that they are interfering with other important parts of their life. Additionally, these themes were endorsed by almost all of the participants, meaning that they are as close as we can get to ubiquitous conclusions from the present sample.

Gaming as a Hyper Stimulating Experience explores what specific parts of the gaming experience lead it to be more enticing, and perhaps more dangerous, than other sorts of activities. It contains four subthemes. *Reward-Reinforcement* describes the way that participants conceptualized their addiction through invoking concepts like dopamine and the reward-reinforcement pathway. *Predatory Game Design* describes features of games that participants identify as predatory, and that developers may intentionally put in games to maximize play time. *Altered States of Consciousness* describes the physical feeling of gaming, and the way that video games can create drug-like highs. *Loss of Agency* describes the shift that participants felt over the course of their relationship with gaming, and how what was once a casual pastime eventually spiraled out of their control. The final theme *Escape and Avoidance* explores the way that participants used video games to escape or avoid distressing experiences elsewhere in their life, and the way that this pattern negatively impacted them.

Other Theme 1: Gaming as a Hyper Stimulating Experience

One of the major questions surrounding Video Game Addiction is what is it about video games that makes them so addictive? Another way to conceptualize this is to ask what it is about video games that makes them more addictive than other sorts of recreational activities. PublicVoid posed this question when he mused that you never never hear about people getting addicted to activities like cooking:

> Some things are just better than others if you were to be, to be addicted. Some things balance out too. I mean it's very difficult to cook until 2 a.m. You don't see people cooking at 4 a.m. and your wife coming out and saying, “You're cooking all day!” Some things just kind of even themselves out. But I think gaming in particular is very sinister and that it's, it's so sedentary too. People can just do that for hours and hours and hours.

There are countless hobbies that people can choose to engage in, but video games seem to hold a special place in the way that they can grab hold of players and strip them of their agency. Consistent with Greenfield’s 2021 article, many participants described specific features of gaming and gaming ecosystems that enticed them to play excessively, such as the ubiquity of computers making it easy to seamlessly shift to gaming from other tasks (Greenfield 2021). Sam described how being forced into online schooling during COVID-19 made it easy to play games with his friends while attending class:

> And everything was pretty balanced, I would say until the pandemic hit. And then it went to online school and I had gotten a job, so I had also bought a PC. So you know, it's very easy to like play games while I'd be on the Zoom call. So I ended up playing very often, like I would say between eight to 12 hours a day. I had all this free time and all my friends had all this free time, so we would all just play games. And then before we knew it, it was like two or three in the morning [...] And because they're online multiplayer, you just load into the match like, stimulation is almost constant.

Sam describes how during this period of mutual isolation, video games provided a way to stay essentially constantly stimulated in a world that had ground to a halt. The

need for remote learning and work during the pandemic meant that many people were *forced* to be on their computers for their daily tasks, which made the temptation to play video games almost inescapable. As the world continues to become more digitized, people will be forced to continuously confront devices which are competing for their attention. This is somewhere that video games diverge starkly from other addictions such as drug and gambling addictions: with the exception of a few specific industries, most people do not regularly have the opportunity to use drugs or gamble while on the job. In the case of video games, anyone who has to use a computer for work will constantly have the temptation to game. This means that Video Game Addicts who also use their computers for work will also have to regularly choose between the hyper stimulating world of video games and whatever tasks their job requires. Steve Shultz described the difference between gaming and other activities as “like hypercharged sugar compared to normal food.”

Similarly, participants spoke about how structural aspects of gaming such as “the loop” made video games a dangerously compelling experience. Dotty reflected on how the way that video games provide well-defined goals makes them more attractive than the ambiguity of pursuing goals elsewhere in life:

> Yeah, and I feel like it's just a really addictive loop that I find myself relating to. And I feel like I think that's just because any human sets a goal. Say they want to, I dunno something crazy, move to a different continent. There's so many steps that you have to plot and that you have to outline you have to follow. And when you complete a step, maybe it doesn't feel as euphoric as it would from a short term goal. You know, because it might take you two hours to defeat this boss, but in real life to achieve one step for this big plan you have to take you a month and you don't really feel it. It's like working out, you want to rockin’ body within a week, but it actually takes time, practice. It takes a lot of patience and patience is just a foreign word to me.

Similar to the *Achievement Unlocked?* theme, Dotty is saying that video games exploit an innate human drive in a maladaptive way. In this case, it is our innate drive to

complete goals that is being hijacked and transformed into something dangerous. This can be interpreted in the context of Wilcock's theory of occupation, which asserts that millions of years of evolution have ingrained in humans a need to engage in purposeful activities (Wilcock, 1993). Interestingly, video games are able to present complex goal-directed tasks in a way that eliminates many of the shortcomings of real-life goals. Unlike other kinds of goals, video games can present measurable, well-defined goals that remove much of the ambiguity present in other parts of life. With this in mind, it becomes unsurprising why some people would preferentially choose to play video games instead of pursuing their other ambitions. Luna reflected on how video games were able to satisfy many disparate kinds of needs in a remarkably attractive package:

> Pretty much it's like, what do humans want? We want to have a purpose, we want to have a community, we want to have interesting things to do, novel experiences. And the game gives you all of that.

Luna's observation emphasizes something frighteningly accurate about video games: they can serve as a one-stop-shop for many of the most essential human needs. When this is combined with the way that video games can present goals unambiguously it is almost surprising that more people are not addicted to gaming. As identified by Wasmuth, addiction can serve as a maladaptive form of occupation by providing structure, routine, and a sense of identity (Wasmuth et al., 2014). One of the reasons that video games are so compelling is that they provide this occupation in a way that more closely mirrors typical human goals. While using substances *can* provide structure to one's daily routine, it does not incorporate goal setting as explicitly as video games. In other words: getting high is the goal in itself. It can provide pleasure or relief from pain, but it does not have the same inherent goal-directed structure that video games possess. On the other hand, video games present the best (or worst) of both worlds:

they provide structure and measurable goals in a way that is almost superior to daily living.

Subtheme: Reward-Reinforcement

Many of the participants in the present study conceptualized their addiction in terms of the reward-reinforcement pathway by referring to concepts such as neural pathways and neurotransmitters such as dopamine. Here, they thought of the incentive structure of video games and the way these incentives can shape and exploit the underlying biological systems that inform our decision making. Steve Shultz recalled an episode of a podcast where the host was comparing the amount of dopamine released by addictive activities to the amount released by having sex, and how that aligned with his own experience of an intense physiological high after beating a challenging boss:

> So I'm going to say for the record [beating that boss] was better than sex. And that is alarming to me. There's no restriction, there's no guardrails, you're just kind of facing all this like sugary dopamine that is unhealthy for you in large quantities.

Here, Steve Shultz's focus on the role of dopamine in his decision making emphasizes the role of biological systems in his addiction. This highlights an apparent paradox in the way that we think of the way we make our decisions. On one hand, we can conceive of ourselves as rational beings who are able to weigh different options and make appropriate decisions to meet our long term goals. At the same time we are biological creatures who must grapple with the fact that what feels good is not always what is in our best interest. Reminiscent of B.F. Skinner's early studies with rats, Steve Shultz was viewing his actions through a lens similar to operant conditioning (Skinner, 1938). This serves to shift the way he thinks of his agency: in the throes of addiction he is more akin to a rat pressing a lever for pellets than an adult choosing to make a dangerous decision.

This biological framing struck a chord with many participants in the study who also had to grapple with the apparent irrationality of their decision making. This gets back to one of the central questions of addiction: why would somebody choose to engage in an activity that they know is harmful? Part of the reason this theme is so popular is likely a simple explanation: it is true. There is a long-established body of knowledge that dopamine is essential to motivation and decision making in the context of addiction, and this appears to hold true for drugs, gambling, and gaming (Potenza, 2008 ;Yale Medicine, 2022). However, another possibility is that the idea of reward-reinforcement serves as a sobering reminder that our decisions are not entirely our own. As much as we might like to think we are the agents of our lives, there are many ways in which we are slaves to our biology. Addiction reveals this reality.

Subtheme: Predatory Game Design

Similar to the subtheme of *Reward-Reinforcement*, some participants hypothesized that video game studios intentionally designed their games to be addictive by exploiting human biology. Mark spoke about free-to-play games which players can download with no upfront cost, but incentivize players to spend money for in-game upgrades:

> I think free to play games, particularly mobile ones, you have to question, “If it's free to play how are they getting money?” They seem to be the crack of games, like you're just surrounded by like all of the addictive possible elements […] I remember one of those games started back in the early days of the iPhone and it's like, “Wait, why do I have to wait six hours to like go to the next level?” They impose these kinds of arbitrary time barriers [...] once they’ve gotten you enjoying it, that's where you can pay money to take away that six hours and you can go onto the next level.

Here, Mark is talking about a well-known industry tactic with mobile gaming where studios design their games so they are technically free to play, but become cumbersome unless the player is willing to spend additional money for upgrades. This

relates to the idea of the “compulsion loop”, where increasing difficulty is leveraged as a way to keep players coming back to beat progressively more difficult bosses (Mandryka, 2016). This is similar to the live service model previously mentioned by Sam, where developers offer exclusive upgrades that are available for a limited time, meaning players have to play during specific periods to earn rewards that are impossible to earn during regular gameplay. While they are implemented in different ways, both of these tactics demonstrate ways that developers can exploit players and reduce their agency.

This reveals an asymmetry in the way that players and studios interact with one another. While the player has the choice about whether to pick up the game in the first place, studios have access to money, research, and data that allows them to design an irresistible experience. In some sense, it is almost irrelevant whether or not studios *actually are* intentionally designing their games to be addictive if their customer base feels exploited. Participants in the present study felt as though their desires were being shaped by unseen forces, and that their addiction was by design. Mark compared his addiction to walking through a casino:

> You know, you can read War and Peace, but if you're sitting in the middle of a casino in Vegas it's problematic. No matter how great and objectively good it is to read War and Peace your environment is going to compel you to do things.

This image speaks to the sense of alienation that can come with Video Game Addiction. As was the case with *Spending Limited Time and Energy* and *Life is More Rewarding than Gaming*, Mark refers to the way that gaming robs addicts of other, more enriching experiences. This means that when gamers think they are having their wills bent by gaming studios it means something deeper than merely occupying their free time. If gaming studios are indeed designing their games to be addictive they are robbing their customers of a fulfilling life.

Subtheme: Altered States of Consciousness

Seven participants said that video games could produce intense pleasurable physiological sensations, often related to adrenaline pumping intensity. Steve Shultz reported that some of the most intense physiological highs he ever experienced came through video games. He reflected on one particular moment while playing Monster Hunter, and noticed how bizarre it was that he could feel extraordinary physiological pleasure by simply playing a game:

> I fought the monster and I decided I was going to beat that monster. And I did it by myself, and it took me 45 minutes of agonizing button presses and joystick motions. *And I cried tears of extreme joy*. Like I've never cried like that before. And it was this really weird cry that I had. And it was like a dopamine-messy-cry because it was like the best thing of my life. And it was like, I was just pressing buttons and moving the joystick around and somehow that elicited a response of total bliss, total release.

The poignancy of Steve Shultz's description cannot be overlooked: the triumph of beating a boss in a video game produced one of the most profoundly pleasurable experiences of his life. At the same time, Steve Shultz reflected on how bizarre it is that something as simple as a video game was able to produce this pleasure. Steve was simply pressing buttons and moving joysticks and looking at a screen, yet somehow the combination of these stimuli were able to produce a frighteningly powerful physiological response. This draws one of the most obvious parallels between gaming and drug use: *gaming gets you high*.

This consideration makes it more obvious why video games are an especially addicting experience. Similar to the testimonies of addicts in Ivsins' and Yake's 2020 study, pleasurable physical experiences are one of the primary motivations to maintain an addictive behavior (Ivsins & Yake, 2020). This also may speak to why Video Game Addicts have so much trouble replacing gaming with other activities. If gamers are habitually used to the intensely pleasurable experiences they find in gaming, the

activities of daily life become bland in comparison. This should also be considered in the context of boredom intolerance, where video games are just one of many ways to remain constantly stimulated in an increasingly digitized world (Greenfield, 2021). Similar to the *Reward-Reinforcement* subtheme, this highlights the asymmetry between the world in which humans evolved and the world we have created. We have access to more stimulation than at any point in our history, and it could be said that our biological "hardware" has not had time to catch up with our technological advancement.

Subtheme: Loss of Agency

The final subtheme of *Gaming as a Hyper Stimulating Experience* speaks to the progressive nature of Video Game Addiction. Here, seven participants recalled the way their relationship with gaming evolved over time. Initially, they approached gaming with a sense of agency. They could choose whether or not to game and did not feel as though they were being manipulated by unseen forces. However, as their addiction progressed, they eventually came to realize that this sense of choice had vanished. Instead of being something they *could do*, video games became something they *had to do*. PublicVoid said he knew he was addicted to video games well before he decided to quit, but became frightened when he saw how far his addiction had progressed:

> I was playing Heroes the Storm at the time, which is like Dota. And I remember it's like a 30 minute game loop. And I remember finishing the one game and then saying like, "I'm done. I'm done after this one." And then I would, I would do the next one. And I'm like, "No, I'm done after *this* one." And I remember taking a mental note for myself saying, "Okay, this is a different type of addiction than before." And after two or three months of that, I realized that this is now an emergency. This needs to be taken care of.

Here, PublicVoid describes his behavior almost as though he is on the outside looking in. He wants to stop playing, but is unable to to actually make the choice to pull himself away from the game. This can be interpreted through the lens of shifting from voluntary to compulsive use as observed in Everitt's 2008 study (Everitt et al., 2008). In

the present example, PublicVoid was already well aware of his addiction, but he still believed he possessed some level of agency. In reality PublicVoid had lost more agency than he was initially aware, and he found this realization deeply troubling. In a similar vein, Dotty described his loss of agency through the cyclical nature of his addiction:

> It was constant. I never thought like “Okay, maybe I should stop.” Instead, I just thought “Okay, what do I do next? What's next?” And eventually it does get to a point where I burn out and that's when I completely dropped everything and I completely dropped the game. I guess you could say I climb out of my cave, or whatever it is, and I reintegrate with society. But I would just constantly see these loops. The cycle of going back to society and then falling again into this pit. And I got to a point where I just didn't really fight it, I just kind of went along with it.

Here, Dotty observed the way his agency fluctuated depending on where he was in his addictive loop. He would have periods where he felt more in control, but would inevitably cede parts of his control to his addiction, bit by bit. It was only when his addiction reached catastrophic levels that he would be able to muster the will to quit gaming entirely in an effort to regain some sense of control over his actions. Dotty’s addictive “loop” in many ways mimics the insidious “compulsion loop” referenced by other participants (Mandryka, 2016). In the same way that the repetitive nature of online gaming can keep players hooked for just one more game, Dotty found himself trapped in a superordinate loop of addictive behavior with effects that pervaded his entire life.

This notion of loss of agency is integral to addiction treatment as conceptualized through 12-step recovery programs like AA and NA. The first step of both programs requires addicts to admit that “[their] lives had become unmanageable” (*Alcoholics Anonymous*, 2001; *Narcotics Anonymous,* 2008). Similarly, participants in the present study consistently spoke about the horror of watching their self-determination slip away. Before this realization, participants may have been able to minimize or explain away the extent to which they were addicted to video games. They may have told themselves they were having specific incidents of Problematic Gaming rather than admitting they were

fully addicted to gaming. This shift in perception may be central to how we differentiate Problematic Gaming from bona fide Video Game Addiction. Once the addict realizes that their choices are no longer their own, then they may be willing to identify their addiction for what it really is.

Other Theme 2: Escape and Avoidance

The final theme identified by participants was the role that *Escape and Avoidance* played in their addiction. This was the most commonly endorsed theme in the present study, with all but one participant singling it out as one of their primary motivations to game. This is consistent with the preexisting literature, which suggests that people who use video games to escape from stressful situations tend to be at higher risk for addiction (Melodia et al., 2022). In one example, Dotty reflected on how the period of his most severe addiction coincided with when he felt powerless against the shifting political forces in the United States and how they may curtail his rights. He described how the game Football Manager let him exert control within the game while he felt the rest of his world crumbling around him:

> The most common theme for me is probably escapism [...] I just enjoy that feeling of control, that feeling of being able to determine what happened, what would not happen, and seeing myself be able to improve in something. It felt nice because during the time when I was playing that game, I did feel a lot of pressure. I felt like I was trapped in my reality and my life, just because of how many constraints I've had placed on me. And so playing games like that, where I felt some control, some sense where if I actually put some work in, I actually get something back. It felt really nice, but to a really unhealthy degree.

Here, Football Manager let Dotty access *the feeling of control* when he, in actuality, had minimal control over his situation. This relates to the distinction between *problem-focused coping* and *emotion-focused coping,* where teens with Video Game Addiction were found to be more likely to choose emotion-focused coping strategies like avoidance (Schneider et al., 2018). Dotty was in a situation when he had legitimate

reasons to fear for his autonomy, but there was very little he could do to change the cultural forces which were threatening him. In essence, Dotty was essentially forced to rely on emotion-focused strategies over problem-focused ones. This is likely a major component of why many participants noted the salience of the COVID-19 pandemic in the development of their addiction. The COVID-19 shelter-in-place was a textbook example of a stressful situation beyond anyone's individual control; it forced people to retreat to the riskier strategy of managing negative emotions rather than solving the problem directly.

Dotty's example also elucidates one of the ways the notion of escape dovetails with other themes such as *Achievement Unlocked?* For him, Football Manager allowed him to avoid the stress of the geopolitical climate while simultaneously giving him a feeling of competence. This provides credence for the compensatory internet use model, which hypothesizes that people use media such as video games to satisfy unmet needs (Melodia et al., 2022). In particular, it asserts that people who play video games to escape from challenging life circumstances are at higher risk for addiction than those who choose to play for pleasure. This also intersects with Halbrook's 2019 study, which found that players who were focused on achievement were at greater risk for addiction than those focused on social engagement (Halbrook et al., 2019). The confluence of these two factors may explain why Luna and Bob both turned to achievement-oriented gaming to cope with chronic illness. While Bob was aware he would rather be spending his time doing something more fulfilling, he said "The comfort of playing video games all the time seemed better than all of the other things that would bring me discomfort."

Clinical Implications

The findings of the present study have important implications for understanding and treating Video Game Addiction. It is clear that Video Game Addiction shares many commonalities with other kinds of addiction while also possessing some unique qualities.

Similar to other kinds of addiction, the role of social connection and belonging appears central to sustaining Video Game Addiction. This lends support to the emphasis on cultivating relationships as expressed in 12-step recovery communities. This means that treatment for Video Game Addiction should similarly include a focus on developing community and incorporating non-addictive social activities. Additionally, the themes related to escape, avoidance, and the hyperstimulating nature of gaming provide additional parallels to substance abuse. Practitioners should expect Video Game Addicts to have underdeveloped skills related to managing difficult emotions, which suggests modalities such as Dialectical Behavioral Therapy (DBT) may be effective tools for treatment. Practitioners should also expect a period of withdrawal or digital detox as the addict adjusts to a less stimulating world without video games.

However, there are also features of Video Game Addiction that seem to separate it from other kinds of addiction. One of these ways is the role of achievement, particularly in the realm of competitive online gaming. The skill based nature of video games means gaming addicts may be at a greater risk of associating their self worth with their addiction than other kinds of addicts. This emphasizes the importance of developing other hobbies or skills where Video Game Addicts can feel a sense of mastery. The other prominent area is the emphasis addicts in the present study place on engaging with compelling narratives or characters. Practitioners may want to encourage less addictive ways for addicts to fulfill these desires including more traditional forms of media such as books or films, or interactive formats like tabletop role playing games.

Limitations of the Present Study

The present study has multiple limitations that should be addressed. Perhaps the most significant limitation is that ten of the eleven participants were recruited from the r/stopgaming subreddit, which may manifest in multiple ways. Despite the initial intention to include primarily active addicts, all eleven participants were either totally abstinent or

trying to actively moderate their playtime at the time of their interview. This is not entirely surprising in retrospect since participation in the r/stopgaming subreddit implies some level of desire to stop or limit one's gaming in the first place. It is also possible that active Video Game Addicts would be less willing to participate in general due to factors like feeling shame about their addiction or being unwilling to admit they are addicted. Participation in the r/stopgaming subreddit may have also influenced the kinds of themes which participants reported, as their views of their addiction may be shaped by the views expressed regularly on r/stopgaming. For example, if achievement focus is a frequent topic on r/stopgaming, participants may be more likely to endorse the theme than they would if they were just reporting what they organically notice from their own experience.

Consistent with the general body of research, the majority of participants in the present study were male and in their 20s or 30s. Additionally, they were all residents of the United States. This means the themes identified in the present study may not be representative of the themes that would be identified in a sample including more diversity in age, gender identity, or national origin. The sample size of eleven participants may be an additional limitation to identifying themes. No new themes were identified after the fourth interview in the present study, which may suggest that saturation was reached early. However, it is possible additional interviews may have provided additional support for themes or subthemes that were considered but ultimately excluded from the final list of themes.

Suggestions for Future Research

The results of the present study suggest that future research is warranted looking at meaning and belongingness in the context of Video Game Addiction. Potential avenues include focusing on demographic groups that were underrepresented in the present sample. The sample in the present study only included gamers who were abstinent or actively moderating their addiction, so future research should prioritize

gamers in active addiction. The current body of research also tends to have predominantly male samples, so additional research including female and gender non-conforming addicts could clarify whether addiction manifests differently based on gender or gender identity. Additionally, the majority of Video Game Addiction research comes from the United States, Asia, and Europe. Future research should also prioritize samples from developing countries including ones located in Africa and South America.

Risk Mitigation Strategies

The purpose of this section is to identify actionable strategies to mitigate the risk and impact of Video Game Addiction. The hope is that these recommendations will be useful for current Video Game Addicts, as well as people concerned about future addiction who want to minimize the risk for themselves or others. These strategies are informed by the suggestions of participants in the present study, as well as prior research which informs the present study. This list is not exhaustive, and is intended to be applied flexibly as not all recommendations may be relevant for everyone.

Develop Meaningful Non-Gaming Activities/Relationships

One of the central themes of the present study is that, like many activities, video games can provide a sense of meaning to players. This means that addicts who do not already have other meaningful pursuits may struggle to quit gaming, as they will simultaneously need to learn to adjust to a life without video games while learning new skills or activities to fill the space previously occupied by gaming. This transition will likely be easier for those who already have other activities that provide meaning. One should try to identify hobbies that they find interesting and that fill them with a sense of pride in retrospect. Activities that allow measurable progress in skill may be especially helpful for scratching the itch of achievement.

This idea holds for relationships. Video games can be a great way to meet new friends and socialize with existing ones. This also means that relationships can be a

major barrier to quitting if video games are one of one's main ways to socialize. Making nongamer friends or finding other ways to socialize will mean that it will not have as profound an impact on one's social life if one chooses to quit.

Practice Patience and Delayed Gratification

One of the main appeals of video games is instant gratification. It takes almost no effort to set up a game, and the round based nature of online games makes it trivially easy to queue for another match once the previous one ends. However, other activities that one may find rewarding will usually require much more patience to sustain in the long term. Constantly expecting instant gratification will make one gravitate towards activities that provide it, such as video games or social media. Patience is a muscle that can be built, and choosing activities that require one to delay gratification will become easier over time. Slower paced activities such as meditating or going on a walk may be aggravating at first if one is used to the breakneck pace of video games, but will become more rewarding over time.

Emotional Management

Participants in the present study often used video games to escape or manage distressing emotions. Avoidance is not always a bad thing, but it becomes dangerous when done in excess. Likewise, it is not necessarily a bad thing to use video games as a means of escape as long as it is done in moderation. Learning other ways to manage emotions will make somebody less likely to become dependent on gaming.

Increasing/Decreasing Friction

Another one of the most enticing features of video games is how effortlessly somebody can turn them on and jump into the full experience. Conversely, many other hobbies take a considerable amount of effort to set up, which may lead one to continuously choose video games over something else they would rather be doing. If somebody would rather be spending their time doing something like learning guitar, they

can increase the “friction” it takes to play video games while decreasing the friction for their preferred activity. If they unplug their console and put it in the closet but leave their guitar set up and ready to play, they may find it easier to motivate themselves to play the guitar since it takes less work.

An Ounce of Prevention is a Pound of Cure

If a person is worried they may be at risk for becoming addicted to video games, incorporating these suggestions sooner rather than later may minimize the impact gaming has on their life. Addiction is progressive, and the negative impacts tend to become more profound as time goes on. There may be a period early in one’s addiction where their relationship with video games is unhealthy, but they still have other hobbies or friends who they interact with outside of gaming. However, somebody may eventually find themselves in a position where they are entirely reliant on gaming for socialization or reducing anxiety. Acting sooner rather than later may be the difference between shuffling around one’s hobbies in an already full life and rebuilding one’s life from the ground up.

Checking All the Boxes

One of the most enticing things about video games is how many purposes they can serve. Video games can help people distract themselves, manage difficult emotions, socialize with friends, engage with interesting stories, achieve a sense of mastery, and feel emotional and physiological highs. As expressed by participants in the present study, one will probably not find another single activity that “checks all the boxes” of gaming. Rather, they will likely have to find a constellation of activities or skills that fulfills each of these needs separately. The way somebody chooses to engage with compelling stories may be distinct from the way they socialize with friends, which may be different from the way they feel a sense of mastery or competence. This means fulfilling all these needs will require some extra effort, and it may take a while to adjust.

Giving Up the Good with the Bad

If one chooses to give up video games entirely, it will require them to look at their choice with nuance and honesty. Even if they are addicted to video games, that does not necessarily mean that their relationship with video games is entirely bad. The people in the present study who chose to quit gaming entirely said they did so because the negative impacts of gaming outweighed the positive ones, but the positive impacts still existed. This is similar to choosing to get sober from substances, where drug addicts often have a period of grieving the loss of the positive experiences that came with their substance use. It is likely that there are still some positive elements of an addict's relationship with video games even if the relationship is dysfunctional overall. Addiction is complicated, and part of making an informed decision is to be honest about the positives and negatives that come with one's choice to quit.

Be Intentional with Your Choices

One of the reasons participants in the present study chose to quit is they wanted to be spending their time doing something they found more important, but would end up spending that time gaming. It can be tempting for one to fantasize about making grand choices at some point in the future while they choose to spend tonight relaxing. In reality, this is an illusion. Life is built in moments: what we choose to do today is all that matters. If one would rather be allocating their time and energy towards writing a book or learning an instrument, then eventually they will have to sit down and actually do the thing they aspire to do. When weighing one's options, one must recognize that things that are tempting in the moment are often unfulfilling in retrospect. Conversely, activities that take a little more effort to settle into at first are usually more rewarding in the long run. Every day contains the opportunity to do something meaningful, but each of us must choose it from the ever expanding list of frivolous activities.

Be intentional.

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Appendix A

6C51 Gaming Disorder Criteria (ICD-11)

Essential (Required) Features:

- A persistent pattern of gaming behaviour (‘digital gaming’ or ‘video-gaming’), which may be predominantly online (i.e., over the internet or similar electronic networks) or offline, manifested by all of the following:
    - Impaired control over gaming behaviour (e.g., onset, frequency, intensity, duration, termination, context);
    - Increasing priority given to gaming behaviour to the extent that gaming takes precedence over other life interests and daily activities; and
    - Continuation or escalation of gaming behaviour despite negative consequences (e.g., family conflict due to gaming behaviour, poor scholastic performance, negative impact on health).
- The pattern of gaming behaviour may be continuous or episodic and recurrent but is manifested over an extended period of time (e.g., 12 months).
- The gaming behaviour is not better accounted for by another mental disorder (e.g., Manic Episode) and is not due to the effects of a substance or medication.
- The pattern of gaming behaviour results in significant distress or impairment in personal, family, social, educational, occupational, or other important areas of functioning.

Specifiers for online or offline behaviour:

6C51.0 Gaming Disorder, predominantly online

- This refers to Gaming Disorder that predominantly involves gaming behaviour that is conducted over the internet or similar electronic networks (i.e., online).

6C51.1 Gaming Disorder, predominantly offline

- This refers to Gaming Disorder that predominantly involves gaming behaviour that is not conducted over the internet or similar electronic networks (i.e., offline).

6C51.Z Gaming Disorder, unspecified

Additional Clinical Features:

- If symptoms and consequences of gaming behaviour are severe (e.g., gaming behaviours persist for days at a time without respite or have major effects on functioning or health) and all other diagnostic requirements are met, it may be appropriate to assign a diagnosis of Gaming Disorder following a period that is briefer than 12 months (e.g., 6 months).
- Individuals with Gaming Disorder may make numerous unsuccessful efforts to control or significantly reduce gaming behaviour, whether self-initiated or imposed by others.
- Individuals with Gaming Disorder may increase the duration or frequency of gaming behaviour over time or experience a need to engage in games of increasing levels of complexity or requiring increasing skills or strategy in an effort to maintain or exceed previous levels of excitement or to avoid boredom.
- Individuals with Gaming Disorder often experience urges or cravings to engage in gaming during other activities.
- Upon cessation or reduction of gaming behaviour, often imposed by others, individuals with Gaming Disorder may experience dysphoria and exhibit adversarial behaviour or verbal or physical aggression.
- Individuals with Gaming Disorder may exhibit substantial disruptions in diet, sleep, exercise and other health-related behaviours that can result in negative

physical and mental health outcomes, particularly if there are very extended periods of gaming.

- High-intensity gaming behaviour may occur as a part of online computer games that involve coordination among multiple users to accomplish complex tasks. In these cases, peer group dynamics may contribute to the maintenance of intensive gaming behaviours. Regardless of the social contributions to the behaviour, the diagnosis of Gaming Disorder may still be applied if all diagnostic requirements are met.
- Gaming Disorder commonly co-occurs with Disorders Due to Substance Use, Mood Disorders, Anxiety or Fear-Related Disorders, Attention Deficit Hyperactivity Disorder, Obsessive-Compulsive Disorder, and Sleep-Wake Disorders.

Appendix B

Internet Gaming Disorder Proposed Criteria (DSM-5-TR)

Persistent and recurrent use of the Internet to engage in games, often with other players, leading to clinically significant impairment or distress as indicated by five (or more) of the following in a 12-month period:

1. Preoccupation with Internet games. (The individual thinks about previous gaming activity or anticipates playing the next game; Internet gaming becomes the dominant activity in daily life.)

Note: This disorder is distinct from Internet gambling, which is included under gambling disorder.

2. Withdrawal symptoms when Internet gaming is taken away. (These symptoms are typically described as irritability, anxiety, or sadness, but there are no physical signs of pharmacological withdrawal.)

3. Tolerance—the need to spend increasing amounts of time engaged in Internet Games.

4. Unsuccessful attempts to control the participation in Internet games.

5. Loss of interests in previous hobbies and entertainment as a result of, and with the exception of, Internet games

6. Continued excessive use of Internet games despite knowledge of psychosocial problems

7. Has deceived family members, therapists, or others regarding the amount ofInternet gaming.

8. Use of Internet games to escape or relieve a negative mood (e.g., feelings of helplessness, guilt, anxiety).

9. Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of participation in Internet games.

Note: Only nongambling Internet games are included in this disorder. Use of the Internet for required activities in a business or profession is not included; nor is the disorder intended to include other recreational or social Internet use. Similarly,sexual Internet sites are excluded.

Specify current severity: Internet gaming disorder can be mild, moderate, or severe depending on the degree of disruption of normal activities. Individuals with less severe Internet Gaming disorder may exhibit fewer symptoms and less disruption of their lives.Those with severe Internet gaming disorder will have more hours spent on the computer and more severe loss of relationships or career or school opportunities.

Appendix C: Recruitment Flyer

SEEKING PARTICIPANTS FOR VIDEO GAME ADDICTION STUDY

What is this?

My name is Michael DeChenne and I am a doctoral student in clinical psychology at The Wright Institute in Berkeley, California. I am completing my doctoral dissertation, and am interested in the role that gaming plays in your lives, with a focus on meaningful activities and social belonging. That is: ***do you find that video games provide to you a sense of meaning or purpose, and do they help facilitate interpersonal connection?***

What's Involved?

Participants in this research study will undergo a 10-15 minute phone screen to verify eligibility, followed by a 60-90 minute interview on HIPAA compliant Google Meet. **Participants who complete the interview will receive a $25 Amazon gift card.**

How do I participate?

If eligible and interested, email mdechenne@wi.edu for details, or scan the QR code below to get started. Pariticpation is completely voluntary and you can end your participation at any time, no questions asked.

Who can participate?

In order to participate you must:

- Be 18 years old or older
- Be located in the US
- Identify as addicted to video games* (this can be currently, or you can be in recovery)
- Able to complete a 60-90 minute Google Meet interview in spoken English
- Not currently in an inpatient treatment setting

*This study is focused on video game addiction and not gambling addiction, so you are not eligible to participate if your game of choice revolves primarily around gambling mechanics (e.g. online poker). This definition of gambling does not include games that include minor gambling mechanics such as loot boxes.

Who is involved?

Researcher: Michael DeChenne, mdechenne@wi.edu

Dissertation Chair: Robert Deady PsyD, rdeady@wi.edu

THIS STUDY HAS RECEIVED IRB APPROVAL FROM THE WRIGHT INSTITUTE'S IRB CHAIR, GINNY MORGAN (IRB@WI.EDU) REFERENCE NUMBER 04.23.2025.01